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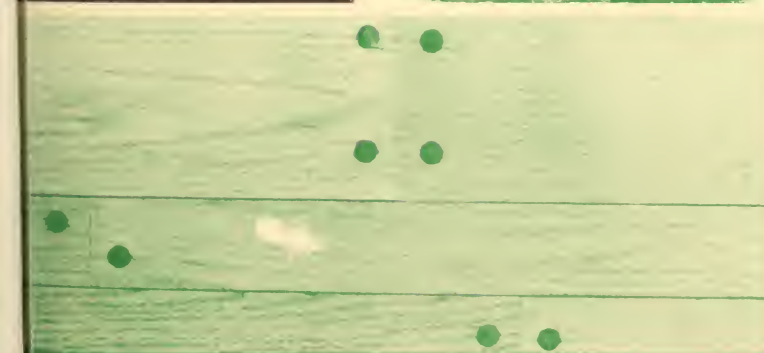
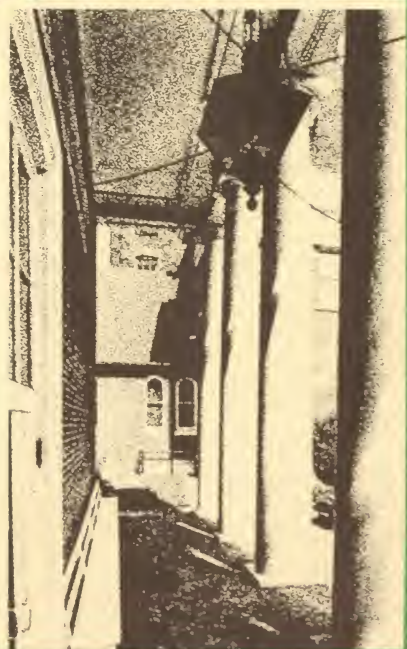








# SCHOOL OF MEDICINE



973/75

UNIVERSITY OF MARYLAND AT BALTIMORE



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**UNIVERSITY OF MARYLAND  
SCHOOL OF MEDICINE BULLETIN  
1973-1975**





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## Tentative Calendar for 1973-1974—Freshman, Sophomore and Junior Years

### 1973

September	6	Thursday	Registration
September	10	Monday	Instruction begins—all classes
November	21	Wednesday	Thanksgiving recess begins at 5:00 p.m. for freshmen, sophomores and juniors
November	26	Monday	Instruction resumes for all classes
December	21	Friday	Christmas recess begins at 5:00 p.m. for freshmen, sophomores and juniors

### 1974

January	2	Wednesday	Instruction resumes for all classes
January	7-18		<i>Registration and payment of fees by mail—all classes</i>
January	14-18		Exam Week—freshmen and sophomores
January	18	Friday	Last day of the first semester
January	21	Monday	First day of the second semester
February	18	Monday	Holiday—Washington's birthday
March	22-29		Spring Vacation begins at 5:00 p.m., March 22 for freshmen and sophomores
April	1	Monday	Instruction resumes for freshmen and sophomores
April	11	Thursday	Easter recess begins for junior students at 5:00 p.m.
April	12	Friday	Holiday for freshmen and sophomores—Good Friday
April	16	Tuesday	Instruction resumes for juniors
May	27	Monday	Holiday—Memorial Day
May	31	Friday	Instruction ends—all classes
		Friday	Precommencement and commencement—Baltimore Campus
June	3-7		Examinations for freshmen and sophomores

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\* All students are to complete registration, including payment of fees, on regular registration days. A penalty fee of \$20.00 will be charged if registration is not completed on prescribed days. The Cashier's Office is located on the 1st Floor of Howard Hall.

\*\* All students will be notified regarding appropriate dates for orientation and registration as they occur.

# SCHOOL OF MEDICINE

The University of Maryland School of Medicine, the fifth medical school to be founded in the United States, was established in 1807 by the General Assembly of the State of Maryland. The principles upon which the school was established have not changed, as they were stated in the Founding Act: "Be It Enacted . . . That a College . . . by the name of The College of Medicine of Maryland, be established . . . upon the following fundamental principles . . . The said College shall be founded and maintained forever upon a most liberal plan, for the benefit of students of every country and every religious denomination, who shall be freely admitted to equal privileges and advantages of education, and to all the honors of the College, according to their merit, without requiring or enforcing any religious or civil tests."

A Board of Regents was selected, and Dr. John Beale Davidge, one of the founders, was appointed as the first dean of the new school. Under his far-sighted leadership, a new concept of medical education was formed: "The science of medicine could not be successfully taught under the usual organization of medical schools; that without the aids of physiology and pathology, either associated with anatomy or as a separate chair of institutes, the philosophy of the body in sickness or in health could not be understood."

At the end of 1807, a medical school existed in Baltimore with officers and faculty, but without buildings or funds. Dr. Davidge and his small faculty continued to teach in their own homes, as they had been doing prior to the official Founding Act. From the beginning, strong emphasis was placed on "bedside" teaching, with the first class of seven students receiving clinical instruction at the Baltimore Almshouse, a workhouse and infirmary for the poor. This emphasis has continued over the years, and the concept of direct patient contact remains important today.

Despite the school's financial difficulties, the first graduation was held in 1810, when the degree of Doctor of Medicine was conferred on five graduates.

A lottery was authorized to finance building, but it was largely due to the enthusiasm and dedication of early faculty members and interested Baltimore citizens that the College of Medicine was able to establish a campus. Land was donated by Col. John Eager Howard, of Revolutionary War fame. Located on the corner of Lombard and Greene streets, the lot had the distinct advantage of being on what was then the outskirts of town, away from areas where mobs were likely to form. At that time, the public was violently opposed to dissection of the human body, as Dr. Davidge was well aware, having had his own small ana-

tomic theatre destroyed several years previously by an angry mob.

The first building, now known as Davidge Hall, was constructed in 1812, and is the oldest building in the United States used continuously for medical education. Its architect, Robert Carey Long Sr., used the Pantheon in Rome as his model for the building. Still used for teaching, Davidge Hall also houses the offices of the dean and other administrative functions, and will eventually be fully restored to its original state and maintained as a medical museum.

Also in 1812, the Maryland General Assembly authorized founding of the additional schools of Law, Divinity and Arts and Sciences. The School of Medicine was unique in the history of education, since it preceded the undergraduate and other professional schools. Later in that century, the schools of Pharmacy and Nursing were established on the campus.

In 1823, the Baltimore Infirmary, the forerunner of the University of Maryland Hospital, was built across from Davidge Hall. The school was one of the first in the country to build its own hospital for clinical instruction; and it was here that intramural residencies for senior students were first established. This building was still in active use until 1973, when all the clinics located there were moved into the new addition to the University of Maryland Hospital.

Through the years, there have been many "firsts" at the School of Medicine. One of the early faculty members, Dr. John Crawford, who had been the first to vaccinate Baltimoreans against smallpox in 1800, presented evidence as early as 1810 that tuberculosis was contagious. His personal library became the nucleus of the medical school library, one of the oldest in the country. In 1839, the Baltimore College of Dental Surgery was incorporated, the first such school to be established in the world. The techniques of auscultation and percussion were taught here for the first time in America as early as 1841; and in 1844,

Dr. David Stewart, the first professor of pharmacy in the United States, initiated his lectures at Maryland. From the beginning, the study of human anatomy was recognized as basic in medical education, but the public outcry and the difficulty in obtaining bodies limited dissection. Still, in 1848, Maryland became the first medical school to make anatomical dissection a required course. Six years later, compulsory courses in experimental physiology and microscopy were introduced. A milestone in cancer research occurred in 1853, when Dr. Francis Donaldson became the first person in America to advocate biopsy and microscopic diagnosis of malignancy. Maryland was the first to establish chairs in the diseases of women and children (1867), and diseases of the eye and ear (1873).

Mergers with the Baltimore Medical College in 1913 and the College of Physicians and Surgeons in 1915 provided the University of Maryland School of Medicine with greatly expanded faculty and clinical facilities. In 1920, the state university was established when the professional schools in Baltimore merged with the Maryland State College of Agriculture in College Park and the state assumed the financial obligation for all the schools.

Today, the School of Medicine is part of a professional campus, located on an area of 28 acres in downtown Baltimore. This campus, comprising the Schools of Nursing, Pharmacy, Law, Social Work and Community Planning and Dentistry, in addition to University Hospital, offers the medical student a unique opportunity to participate in the growing number of interdisciplinary educational programs carried out among professional schools.

The current enrollment of the School of Medicine is 583, and this number is expected to increase as new physical facilities become available. The school was integrated racially almost from its inception, and women were first admitted in 1921. In 1973, 82 of the students were women.



## UNIVERSITY OF MARYLAND HOSPITAL

The University of Maryland Hospital, one of the oldest institutions for care of the sick in the state, is the primary teaching facility for the University of Maryland School of Medicine, and a major center for health care, medical education and research.

The original building, known as the Baltimore Infirmary, was built in 1823. The present main hospital was erected in 1933-34, with a capacity of 435 beds. In 1952-53, the Psychiatric Institute building was added as a junctional wing.

A modern, 13-story new addition to the hospital was opened early in 1973. When all areas of this addition are operational, the capacity of the institution will increase to 864 beds and 60 bassinets. With direct interconnections between the main hospital, the new addition and the Institute of Psychiatry and Human Behavior, the complex will function as one integrated facility.

The University of Maryland Hospital is the primary source of health care for more than 100,000 area residents. As the number of doctors, nurses and health care facilities has steadily decreased in the inner city, the hospital has assumed more and more responsibility for the total health care of the surrounding community. This is reflected in the rapidly-growing ambulatory patient load, estimated at nearly 300,000 combined emergency room and clinic visits for the next fiscal year.

The new addition houses all the ambulatory facilities of the hospital, including an expanded emergency suite, a screening clinic, a pediatric acute primary care unit, the Family Practice Program's Health Center, adult and pediatric specialty clinics, a primary care clinic directed by the Department of Social and Preventive Medicine, a new combined inpatient and outpatient adolescent unit, and many other expanded ambulatory services.



The new addition also provides space for new operation and recovery suites, a multidisciplinary cancer unit and expanded educational facilities, with approximately 100 seating spaces for teaching per floor.

A heliport adjacent to the main hospital permits rapid transportation of accident victims and other intensely ill patients to outstanding treatment in the Maryland Institute for Emergency Medicine. It also serves to speed sick newborns to the intensive care neonatal nursery.

All hospital accommodations are a part of the teaching programs.

## AFFILIATIONS

The clinical facilities used in the teaching programs of the School of Medicine are numerous and varied. They must provide a broad spectrum of opportunities ranging from basic health care to complex medical problems requiring expensive, highly specialized facilities and staff.

Crucial to medical care in the seventies are the community hospitals in

which the majority of primary and secondary level health care problems are seen. Recognizing these facts, the medical school has developed a network of institution-to-institution affiliations with community hospitals at three educational levels: undergraduate, graduate and postgraduate.

A closely knit undergraduate affiliation exists with four community hospitals which serve a wide variety of patients and geographic settings. They are Maryland General, Mercy, Provident and York (Pa.) hospitals. Each has made a major commitment toward being an area health education center, firmly believing that the end result of a teaching environment is better patient care. Central to this are programs devoted to the continuing education of all staff. In addition, all have well-developed graduate education programs which attract interns and residents who wish to train in a community hospital atmosphere. These hospitals have recruited fulltime educators in most departments, who hold academic appointments as fulltime faculty members and participate in activities of the medical school.

The University of Maryland Hospital, the core teaching facility of the medical school, provides primary care facilities for the surrounding neighborhoods. However, referred patients with a variety of complex health care problems, whose care is too specialized for a community hospital, occupy an ever-increasing number of beds. In this respect, the hospital serves as a resource for the entire state with numerous special care areas including specialty programs in renal dialysis, open heart surgery, cardiac catheterization, coronary care, acute stroke management, radiation therapy and many others.

Closely linked with the University of Maryland Hospital is the Baltimore Veterans Administration Hospital. This hospital, supervised by a dean's committee, serves as the regional acute general hospital for veterans throughout the Maryland area. Within a few years the

Veterans Administration Hospital will be completely integrated with the medical school and located on this campus. Currently the departments of medicine and pathology provide complete faculty and housestaff coverage for the Veterans Administration facility.

Still other facilities are needed to complete the educational opportunities for physician training. Special programs involving one or more departments are conducted at Montebello State Hospital, a state rehabilitation and chronic care facility; the John L. Deaton Medical Center, a new extended care and rehabilitation facility; Baltimore City Hospitals, an acute care general hospital; Mount Wilson Hospital, a state tuberculosis facility; James L. Kernan Hospital, for children and adults with specialized orthopedic problems; the Sheppard-Pratt Hospital, a private psychiatric hospital, and Spring Grove and Rosewood State hospitals, state mental health hospitals.

## BALTIMORE VETERANS ADMINISTRATION HOSPITAL

The Veterans Hospital was constructed 20 years ago on a 15-acre campus located approximately four miles from the center of Baltimore. It is approximately three miles from the Johns Hopkins Medical Institutions and four miles from the University of Maryland Hospital.





The mission of the hospital is to provide general medical and surgical care for eligible veterans and to operate a small, active drug treatment program and an outpatient clinic for service-connected problems. It is intimately affiliated with the Schools of Medicine at the University of Maryland and Johns Hopkins University through a dean's committee and actively supports education, training and research in order to achieve high quality patient care.

The medical, laboratory, genitourinary surgery, drug treatment-psychiatric services are intimately affiliated with the University of Maryland Hospital. The surgical service which includes general, neuro, orthopedic and ophthalmic surgery is intimately affiliated with the Johns Hopkins University School of Medicine. The radiology service is affiliated with both schools. All of the 47 fulltime and parttime staff and 113 consultants and attending physicians are active members of the faculty of one of the medical schools. The 40 interns and residents are selected by the medical schools and rotated for blocks of time to the University of Maryland or the Johns Hopkins hospitals as well as to the Baltimore Veterans Administration Hospital.

Nursing, social work and psychology students as well as medical students are rotated through the hospital for portions of their training. The active and growing research program adds to the academic aspects of the environment. The medical library contains 183 current periodicals and 3,137 books and monographs and obtains many inter-library loans from libraries of the two medical schools.

## MARYLAND GENERAL HOSPITAL

Maryland General Hospital has been meeting the health needs of downtown metropolitan Baltimore since it was founded in 1883. As an institution which is constantly growing and expanding, the hospital offers a broad range of modern



facilities and equipment. Through the years, Maryland General has expanded from a capacity of 50 beds to its present bed complement of 428, plus 25 bassinets.

The present hospital began in 1946 when the people of Baltimore contributed funds for a new building program. In 1956, the first major unit of seven floors was dedicated. In 1961, a nurses' home was built and in 1962, another major unit of the hospital was completed. A seven-story eye, ear, nose and throat wing was finished in December 1968.

The seven-story eye, ear, nose and throat wing houses the central supply room, pharmacy, pediatric department and a coronary and intensive care unit. The special care unit contains 13 beds, each with the latest in electronic monitoring devices. Developments in kidney research are centered in the renal laboratory and other special areas such as the Department of Nuclear Medicine and a pulmonary laboratory are all part of Maryland General's continuous growth.

One of the most recent developments in the hospital's growth included the removal of a series of old buildings on Linden Avenue to make way for a 518-car parking garage. The facility allows patients, visitors and employees to enter or leave the hospital without going outside.

For the fiscal year ended June 30, 1972, there were 13,840 admissions, 7,679 surgical procedures and 962 obstetrical deliveries. The hospital's Outpatient Department accommodates in excess of 75,000 visits per year with expectations to reach over 200,000 by the year 1978. Because of this increased demand for outpatient services, the hospital purchased and renovated the Richmond Market Armory to provide additional space needed for general clinics.

Maryland General is actively involved in a diversified medical education program and is dedicated to provide the best possible health care to the people of Baltimore.

## MERCY HOSPITAL

Mercy Hospital traces its history to the foundation of the Washington School of Medicine in 1824. In 1872, some of the members of this institution founded a new school, which was the beginning of the College of Physicians and Surgeons of Baltimore.

Washington School of Medicine opened a dispensary and a small hospi-

tal at the corner of Saratoga and Calvert streets and named it the Baltimore City Hospital. This building served both as a hospital and a medical school. In 1874, the Sisters of Mercy, upon the invitation of Washington School of Medicine, assumed responsibility for the nursing services of the hospital. In 1876, Washington University merged with the College of Physicians and Surgeons.

In 1888, the Sisters of Mercy, with the assistance of the faculty of the College of Physicians and Surgeons, began construction of a new hospital adjacent to the earlier buildings. In 1909, the name of the institution was changed to Mercy Hospital and in 1911 another larger building was constructed occupying the remaining frontage on that block of Calvert street. The original College of Physicians and Surgeons building was purchased by Mercy Hospital from the University of Maryland in 1921.

Many additions have been made to the physical plant over the years. The present 21-story hospital on St. Paul Place, close to the commercial center of Baltimore was opened in 1963. A new gastroenterological research laboratory was completed in 1965. A center for gastrointestinal endoscopy has also been established. A large, modern ambulatory patient department with numerous design innovations to accommodate both private and clinic patients was completed in 1969.

The hospital is very active in the teaching program of the medical school. Faculty members serve as fulltime heads of medicine, surgery, pediatrics and obstetrics-gynecology. Medical students rotate through the Mercy clinical services during the second, third and fourth year.

During the year ending June 30, 1972, there were 11,269 general admissions, 80,571 outpatient visits, 1,308 obstetrical deliveries and 23,654 emergency visits in the accident department.

The bed capacity is 364 plus 36 bassinets. All hospital beds are available





for teaching purposes. A School of Nursing, a School of Medical Technology and a School of Radiologic Technology are conducted in conjunction with the hospital.

## PROVIDENT HOSPITAL

Since its establishment on June 13, 1894, Provident Hospital has grown from a ten-bed infirmary to a modern 273-bed hospital complex. The busy, well-equipped emergency rooms and outpatient clinics and Provident's outreach programs (Comprehensive Neighborhood Health Center, Project A.D.A.P.T. concerning drug abuse, Provident Quarterway House, Alcoholism Liaison Service Program and Community Mental Health Program) testify to Provident's genuine commitment to meeting the needs of a predominantly black urban community.

Provident's teaching program is supervised by fulltime chiefs or clinical services, a director of medical affairs, and the associate director of medical education. Excellence in patient care is at all times the program's main objective. Provident's community orientation and the broad spectrum of cases available enhances the learning experience. Orientation and instruction in this urban setting are achieved through ward rounds, lectures and bedside teaching. In addition, work in the Outpatient Department is supervised by members of the active visiting staff of the respective services.

Provident's active and attending staff consists of over 150 physicians including dentists and consultants. Many of the active staff members have teaching appointments with regional medical schools.

## YORK (PA.) HOSPITAL

York Hospital had its beginning in 1880 as York Hospital and Dispensary and at



that time had 12 beds to serve a community of 16,000.

By 1928, the hospital had expanded to 100 beds and had reached 3,000 admissions. Two years later a 134-bed hospital was built on its present site south of the city of York.

Through the years, in response to the needs of York County residents, the hospital steadily has enlarged its bed capacity and all related services. Today, York Hospital now serves as a community health care center that cares for 265,000 residents of the Greater York Community and from communities along the northern Maryland line. Over 85,000 residents received inpatient, emergency room or outpatient services in the 1971-72 fiscal year.

York Hospital has 530 beds and 65 bassinets; an attending staff of 191 physicians and dentists in 27 specialties; an intern and resident staff of 49, and approximately 80 physicians who serve as medical and surgical department coordinators and physician teachers. The hospital has an employe staff of 1,400.

The hospital offers complete emergency room and outpatient services, maintains a 14-bed intensive care unit, a six-bed coronary care unit, a 28-bed stroke unit and a cardiac diagnostic



laboratory. York has functioning departments in medicine, pediatrics, obstetrics and gynecology, surgery, dentistry, anesthesiology, pathology, radiology, family practice, hematology, medical education, outpatient services, nuclear medicine, physical medicine and rehabilitation and pulmonary services.

An \$18.7 million expansion program of construction, modernization and renovation will double the size of the hospital and provide for 100 additional beds. The construction program includes a formally organized outpatient and emergency service facility that will become the outpatient, diagnostic, preventative and curative center of the community. This area of expansion will be completed by the summer of 1973.

An extensive educational complex has been built to meet the teaching demands of medical education and four paramedical schools—nursing, respiratory therapy, radiologic technology and medical technology.

The hospital has earned nationwide recognition in graduate and postgraduate medical education programs. In the past 13 years, the hospital has consistently received its full complement of interns through the National Intern Matching Program. The intern program offers rotating, straight surgery and family practice internships. Approved residencies include family practice, internal medicine, ob-gyn, surgery and pathology.

## OFFICE OF HEALTH CARE PROGRAMS

The Office of Health Care Programs (OHCP) was created in 1969 for the purpose of coordinating the planning and implementation of new ambulatory health care systems for the School of Medicine, University of Maryland Hospital and their affiliated institutions.

The OHCP is composed of faculty, supporting staff and operational program personnel, and derives its responsibility and authority from the dean, who has directed it to plan, develop and implement programs in the following areas:

*Ambulatory Care Services*—Beginning with the reorganization and staff development of the Outpatient Department and emergency room programs, the OHCP has continued in this area by developing additional primary care services including a screening and referral unit and an adult component of general internist-directed primary health care. Working with the directors of psychiatric, pediatric and ob-gyn ambulatory services, the OHCP has developed new types of psychiatric care and educational programs, and is currently planning an internist-pediatrician-obstetrician primary health care team.

*Interschool Educational Programs*—The OHCP has developed an interdisciplinary group of health professionals to coordinate education and care programs involving students, faculty and staff of the medical, nursing, pharmacy, dentistry and social work and community planning schools. It is deeply involved in the planning and implementation of new primary care education and service programs, for example, the primary care nurse practitioner program, which is a cooperative effort of the nursing, medical and pharmacy schools.

*Community Programs*—The involvement of consumers in the planning and decision-making process of health care delivery has been an important aspect



of the OHCP. The associate dean for health care programs has been actively involved with the Baltimore Regional Comprehensive Health Planning Agency since its inception.

Members of the OHCP have played an integral role in the creation and activities of the Ambulatory Services Committee, which was formed during 1971-72 by combining the Outpatient Department and the emergency room standing committees of the Medical Board of the University of Maryland Hospital. The Ambulatory Services Committee presently consists of 36 members: 18 consumers, representing the patient population served by the University, and 18 providers, including faculty and staff of the five professional schools and students from each class of the medical school.

*Operational Research*—The OHCP carries out systems studies of various management, care and educational programs. Opportunities are offered graduate students to work under supervision in conducting operational health services research.

In April 1972, the interdisciplinary faculty of the OHCP was consolidated into the Department of Social and Preventive Medicine, forming the Division of Health Services.

## OFFICE OF MEDICAL EDUCATION

The Office of Medical Education, developed in July 1972, is designed to serve as a consultative unit to all of the departments of the medical school in the following areas:

- Educational resources (audiovisual, television media preparations and computer assisted instruction)
- Instructional design, implementation and evaluation
- Faculty seminars regarding new developments in instructional design
- The development of communications

and ongoing relationships with the National Medical Audiovisual Center, the Lister Hill National Library of Medicine and the American Academy of Medical Colleges, all concerning biomedical education and communications

—Development of individualized learning centers, both centralized and decentralized

—Investigation and utilization of simulation techniques in the area of clinical teaching

—Coordination of library facilities to include the storage and retrieval of all non-printed educational material and software.

## ILLUSTRATIVE SERVICES

The Department of Illustrative Services is a functioning component of the Office of Medical Education. The department supplies audiovisual aids to medical school faculty and staff for teaching, research and publication purposes. The department also supports student activities which require this type of service. The primary services include illustration, photography, offset printing, projection and audio recording.

*Illustration*—This includes comprehensive renderings of surgical and clinical techniques, anatomical renderings, statistical charts and other graphic representation, simple and comprehensive design and finishing of flyers, brochures, programs and posters. It also includes layout and paste-up for offset printing and photographic copying. In



addition, this section is responsible for the design and finishing of motion picture titles, displays and exhibits.

*Photography*—Photography includes photographic copying of flat material such as written matter, x-rays, laboratory tracings and data; photography of specimens, equipment setups, surgical, clinical and laboratory activities; and public relations, archives and portraiture for school-related purposes. The department is equipped for photomicrography (large and small format), slide duplication and motion picture photography. The department further acts as a collecting station for commercial processing of color photography by other departments.

*Offset Printing*—This section is maintained to furnish volume duplication and offset printing, either electrostatically or through photographic enlarging or reduction involving either line or half-tone. The plant is also equipped for graphic arts finishing such as collating, folding, stapling, punching, cutting and padding.

*Projections*—The section is responsible for the maintenance, distribution and operation of projection and related audiovisual equipment for use in the classroom and lecture halls.

## OFFICE OF STUDENT AFFAIRS

The Office of Student Affairs is designed to provide students enrolled in medicine, physical therapy and medical technology with guidance, advice, help and administrative services. In addition, the office is responsible for monitoring student progress and advancement, the distribution of financial aid, registration, graduation and all aspects of student life relating to the undergraduate medical and allied health education. To this end, the staff includes two fulltime and three parttime assistant deans, clinical staff and student ombudsman.

While all of the staff are available to help all students in any area, some members also assume a specialty area within their overall functions. These specialty areas include minority affairs, senior elective year advising, marital counseling and national internship and residency program advising.

*Student Ombudsman*—Each year a student, usually one having completed all or part of his third year, is appointed to the Office of Student Affairs' staff. The job is fulltime and is salaried. The functions of the ombudsman vary to suit the interests and personality of the incumbent, but include, in any event, liaison with all student committees and organizations, ex-officio membership on numerous faculty committees and as a contact for both students and faculty for information, advice and help. Students interested in this position should contact the Office of Student Affairs.

*Senior Elective Program*—The Office of Student Affairs administers the senior elective program, compiling course offerings, arranging for advisors, scheduling the ambulatory rotations, scheduling courses and changes of electives and providing both for evaluation of the student's performance during electives and his evaluation of the electives taken. This office also provides assistance to individuals taking off-campus electives which require letters of recommendation.

## FINANCIAL ASSISTANCE

The University of Maryland offers financial assistance to qualified students through scholarships, long-term loans and emergency loans. Loans and scholarships for medical students are administered by the Financial Aid Committee. Inquiries should be sent to: Director of Financial Aid, University of Maryland, Baltimore Professional Campuses, Baltimore, Md., 21201.

Financial aid, whether scholarship or loan, is awarded only to students with demonstrable need. Both academic per-



formance and extent of need are considered in selecting scholarship recipients.

## Loans

*Long-term*—Long-term loans most often come from federal funds administered under the Health Professions Students Loan Program. Interest rates and terms of repayment vary for Health Professions loans issued prior to June 30, 1969. Such loans made after that date accrue interest at 3 per cent per annum beginning one year after the borrower ceases to be a fulltime medical student, intern or resident, allowing for a maximum of five years of training beyond graduation from medical school. A student must qualify under the provisions set by the federal government. In addition, long-term loans from private sources are available through the generosity of a variety of donors. Qualifications for these loans, interest rates and repayment vary according to the specific fund. Applicants for loans are screened by the Financial Aid Committee which determines those qualified.

Long-term loans not administered by the Financial Aid Committee are guaranteed loan programs available in most states and the American Medical Association. The guaranteed loan programs permit a qualified student to borrow up to \$1,500 per year from a bank in his home state. Information on these, regardless of state of residence, may be obtained from the director of financial aid. Loans from the American Medical Association are for a maximum of \$1,500 per academic year; however, these loans are not available for first year students.

*Short-term*—Short-term loans are designed for emergencies which may arise during the academic year. These are usually restricted to small amounts and repayment is expected within the semester or academic year. One such loan fund is the Student Emergency Loan Fund which is administered by the

assistant dean for student affairs in accordance with the terms of the sponsoring organization.

## Prizes

*The Dr. Wayne W. Babcock Prize*—Each year a prize of \$50 will be awarded to a graduating senior for outstanding work in surgery as a memorial to Dr. Wayne W. Babcock.

*The Balder Scholarship Award*—Each year a prize of \$500 will be awarded for outstanding academic achievement to a graduating senior.

*The Dr. J. Edmund Bradley Prize*—Each year a prize of \$100 is awarded to a graduating senior who has performed with special excellence in pediatrics. This award is given in honor of Dr. Bradley, professor emeritus of pediatrics.

*The Louis, Ida and Samuel Cohen Award*—A scholarship of approximately \$500 is awarded annually to a member of the senior class and housestaff for recognition of their superior scholarship, scientific knowledge in internal medicine and human understanding and compassion for patients.

*The Faculty Prize*—The faculty will award the Faculty Gold Medal and Certificate and five or more Certificates of Honor to those highest ranking candidates for graduation who, during their four academic years, have exhibited outstanding qualifications for the practice of medicine.

*The Dr. Jacob E. Finesinger Prize*—A prize of \$100 is given each year in honor of Dr. Jacob E. Finesinger, late professor and chairman of the Department of Psychiatry, to the member of the senior class selected by the faculty who has done outstanding work in psychiatry.





*The Dr. A. Bradley Gaither Memorial Prize*—A prize of \$25, given each year by Mrs. A. Bradley Gaither as a memorial to her husband, is awarded to the student in the senior class doing the best work in genitourinary surgery.

*The Dr. William Alexander Hammond Award*—A prize of \$100 is awarded to a graduating senior who has performed with special excellence in neurology.

*The Dr. Leonard M. Hummel Memorial Award*—A gold medal and Certificate of Proficiency will be awarded annually as a memorial to the late Dr. Leonard M. Hummel to the graduate selected by the Executive Committee of the faculty who has manifested outstanding qualifications in internal medicine.

*The Dr. Harry M. Robinson Sr. Prize*—A prize of \$25 is given each year in honor of Dr. Harry M. Robinson Sr., late professor emeritus of dermatology, to the senior selected by the faculty who has done outstanding work in dermatology.

*The Dr. Milton S. Sacks Memorial Award*—A prize of \$100 is given each year in honor of Dr. Milton S. Sacks, late professor of medicine and hematology, to the senior selected by the faculty who has performed with special excellence in medicine and hematology.

## STUDENT LIFE

### STUDENT COUNCIL

The Student Council is the organization recognized by the administration of the School of Medicine as the official representative body of medical, medical technology, physical therapy and radiological technology students. All students of these professions become *de jure* members of the student body at registration upon payment of the student activities fee. The Student Council members are elected by the classes of the student body with one representative per 50 members (or fraction thereof), the first representative being the duly-elected president of the class.

Duties of the Student Council are as follows: (1) to disburse monies from the student activities fund according to the council's financial disbursement guidelines; (2) to organize and administer the intramural athletic program, and (3) to define areas of schoolwide interest and to coordinate support for related activities through policy guidance, funding and promotion.

*Intramural athletic program*—Each year the Student Council sponsors an intramural program for medical, medical technology, physical therapy and radiological technology students. The events usually consist of interclass competition in touch football, basketball, softball and tennis. A ping-pong tournament and coed volleyball are also regular events.

### STUDENT PUBLICATIONS

*Terrae Mariae Medicus*—The yearbook is published annually at the discretion of the medical school's senior class. Since 1896, this volume has provided a wide coverage of student life. The cost of the yearbook is included in the student activities fee.

*Aesclepian*—The student newspaper is sponsored by a student group such as

SAMA or the Student Council. A student editor is paid by the sponsoring group to produce up to 18 issues a year.

### COMMITTEE ON STUDENT ACTIVITIES

A standing committee of the School of Medicine Council is charged with the continued study of the health and general welfare of the students. This includes health and safety, ethics and financial aid. The assistant dean for student affairs chairs this committee which is composed of presidents and chairmen of student groups, editors of student publications and faculty members with particular concern in the area of student affairs which are appointed by the assistant dean.

### STUDENT AMERICAN MEDICAL ASSOCIATION (SAMA)

The SAMA chapter at the University of Maryland School of Medicine is chartered as a member body of the national SAMA, an organization begun in 1951 to channel student activism into improving the delivery of health care in the United States. As such, its concerns encompass the entire spectrum of health issues, from manpower recruitment, education and utilization, to legislation and planning of innovative methods of raising the level of health care in the country. Membership is open to all medical, allied health professions and premed students on an affiliate basis. Nationally, SAMA offers students the opportunity to design, administer and participate in programs and projects which increase the student's awareness of the multiplicity of factors that determine "level of health." Locally, SAMA sponsors freshman orientation for the medical school, fosters social interaction among medical students and sends delegates to regional conferences and national conventions. Each year SAMA also selects the teaching faculty to receive the Golden Apple award in recognition of their teaching excellence.

### WOMEN'S AUXILIARY TO STUDENT AMERICAN MEDICAL ASSOCIATION (WASAMA)

The aims of WASAMA are to familiarize its members with the profession of medicine, its aims and ideals. It has promoted closer association among these members, both with each other, and with wives of faculty members and with physicians of the medical community. The scope of the auxiliary's involvement includes a wide range of activities. Primary areas of concern are community service projects, medical school services and the education of members concerning current trends in medicine, such as medical legislation, distribution of physicians, local health care programs, etc. Specifically, these activities include publication of areawide housing information, welcoming picnic, sponsorship of workshops on interpersonal commu-





nication, microscope sale and social functions throughout the year. Membership is open to all spouses of medical students.

## STUDENT NATIONAL MEDICAL ASSOCIATION (SNMA)

The University of Maryland SNMA chapter was organized in 1970 by the minority students in the medical school. The organization's general goals are aimed at alleviating the crisis of health care delivery to minority groups of the American population by increasing the enrollment and decreasing the attrition rate of minority students in medical schools. A very specific goal of the national organization is a program directed at the problem of sickle cell anemia. On campus, the local chapter gives a voice to problems facing minority students in medicine in general, and at this medical school in particular. The group also provides pertinent activities and functions for the well-being of its members.

## HONOR COUNCIL

The Honor Council is currently composed of one elected member of each class plus a senior chairman. Its prime responsibility is the affirmation, interpretation and execution of the Honor Code. Acceptance of the provisions and obligations of this or any subsequently restated code is required of all entering or attending medical students and faculty. The code is currently undergoing revision.

## FAMILY PRACTICE CLUB

Started in 1969 by a group of medical students, this organization seeks to increase the awareness of the new specialty of family practice and to provide activities related to it. This is accomplished through the club's summer preceptorship program and its monthly meetings at which students interact socially with practicing family physicians

in their discussion of topics of current interest in family medicine. The Maryland Academy of Family Physicians and the medical school's Division of Family Practice are both very active in their support of the club's activities.

## UNIVERSITY OF MARYLAND MEDICAL SOCIETY

Established in 1972 as the "chapter body" of the Medical and Chirurgical Faculty, Maryland's state medical society, this is the mechanism by which students may express their views on current medical issues to the parent organization. Each medical school in the state is entitled to two nonvoting representatives, juniors or seniors, to serve in the Med Chi's House of Delegates. At Maryland, this society elects these representatives and their alternates. Membership is open to all medical students.

## ALPHA OMEGA ALPHA

The Beta chapter of Maryland was established at the University of Maryland in 1949. Medical students possessing outstanding qualities of moral integrity, scholarship and leadership are elected to membership in their third or fourth years. The society sponsors an annual lectureship, a forum for the presentation of medical student research and chapter meetings on topics of social, educational and philosophical interest to medical students and faculty.

## HOUSING

The Baltimore City campus has two residence halls: Parsons Hall with a capacity of 236 spaces for females and the Baltimore Union which has 64 spaces for females and 128 spaces for males. Since facilities on campus are limited, assignments are based on distance from home to campus, date of housing application and availability of space.



The Baltimore Union, a five-story semi-airconditioned building, is located adjacent to the University of Maryland professional schools at 621 West Lombard Street. Students are housed on the third, fourth and fifth floors while the lower floors have a cafeteria, fountain lounge, meeting rooms, laundry facilities, gameroom and bookstore. Double rooms only are available and they are furnished with a bed, mattress, chest of drawers, closet, bookshelves, desk, desk chair and desk lamp. Telephone service is available through Chesapeake and Potomac Telephone Company, however cost of the telephone is not included in the room rate.

Parsons Hall, a seven-story semi-air-conditioned building located at 622 West Lombard Street, is a residence for women. This dormitory provides accom-

modations for nurses, pharmacy, x-ray, medical-technology, dental hygiene, women graduate students and women professional students. Single, double and triple rooms are available. Telephone service is limited to campus phones in each room and furnishings provided are similar to those in the Baltimore Union.

The charge for each student is \$235 per semester and subject to change. Towels and linens may be rented from the Gordon-Davis Linen Service or each resident may provide his own. A small amount of storage for luggage is available.

Application forms for housing may be secured by writing the Director of Housing, 621 West Lombard St., Baltimore, Md. 21201. Rooms will be assigned only on receipt of an application form duly executed.



## STUDENT HEALTH SERVICE

The School of Medicine undertakes to provide medical care for its students through the Student Health Service located in Room 145 in Howard Hall. The office is staffed by a physician-director, assistant director, three internists, two psychiatrists, a gynecologist, three registered nurses and two secretaries.

The care offered by the Health Service is an office type of practice for those with illnesses or injuries not requiring hospitalization but preventing the student from attending classes.

All students are required to have Blue Cross hospitalization insurance or its equivalent and each student must produce certified proof of such membership at the time of registration. A special Blue Cross-Blue Shield student policy is available to all students enrolling in the medical school. Detailed information regarding the provisions of the student policy may be obtained from the Student Health Service.

The Health Service provides each new student with a physical examination, tuberculin test and chest x-ray as scheduled by the medical school. Abnormalities found during the examination are discussed with the student. Passing the physical examination is required for final acceptance of any student.

Prospective students are advised to have any known physical defects corrected before entering the School of Medicine in order to avoid absences during the academic year. Adherence to preventive medicine programs conducted by the Health Service (i.e., tuberculin skin testing and x-rays of chest) is required of all students.

The Health Service does not treat chronic conditions contracted by students before admission or extend treatment to acute conditions developing in the period between academic years.

A student's spouse or other members of the family are not eligible for Health Service care. In this regard, however,

the Family Practice Health Center has offered to make itself available to family members for health care.

Students who register for nine or more credit hours are required to pay a health fee at the time of registration. This fee covers all visits to the Health Service during the school year and any medication that is deemed necessary when available. Any necessary diagnostic studies will be at the expense of the student unless the studies are covered under the Blue Cross-Blue Shield or equivalent insurance.

For further information contact the Student Health Service.

## HEALTH SCIENCES LIBRARY

The medical, dental, pharmacy, nursing and social work and community planning schools are served by the Health Sciences Library in a modern, four-story building. The oldest part of the library collection dates back to 1813 when the University of Maryland purchased books of Dr. John Crawford to form a medical library. In addition to the Crawford collection, the library contains more than 155,000 bound volumes and regularly receives over 3,000 scientific periodicals and annual publications. Thus, in providing literature to support the instructional programs and research efforts in five professional schools, the library





makes available a wide range of material to the medical community.

During the academic year, the library is open 87 hours per week (six nights until 11 p.m.) with a staff trained to give reference service on duty most hours.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library at Johns Hopkins University are open to students of the medical school without charge. Other scholarly libraries of Baltimore making their resources available are the Peabody and Enoch Pratt Free Libraries.

## MEDICAL ALUMNI ASSOCIATION

"The alumni of the School of Medicine of the University of Maryland, desiring to further the interest and advancement of the University of Maryland School of Medicine and perpetuate the association made during the medical school period . . ."

With this preamble to their constitution, the Medical Alumni Association has set forth to serve all graduates, students, faculty, staff and physicians affiliated with the School of Medicine.

The association maintains up to date addresses of all graduates and establishes contact with them throughout the year by various mailings. Every five years class reunions are organized and held in conjunction with Alumni Day and graduation.

The alumni office also exists to help students currently attending the medical school. Through its small financial capability, student loans can be obtained. Another service of the association is putting students in touch with practicing physicians in their chosen specialty and those alumni in cities where students might be selecting internships.

Alumni Day activities are planned to keep graduates and friends up to date on the medical school and professional

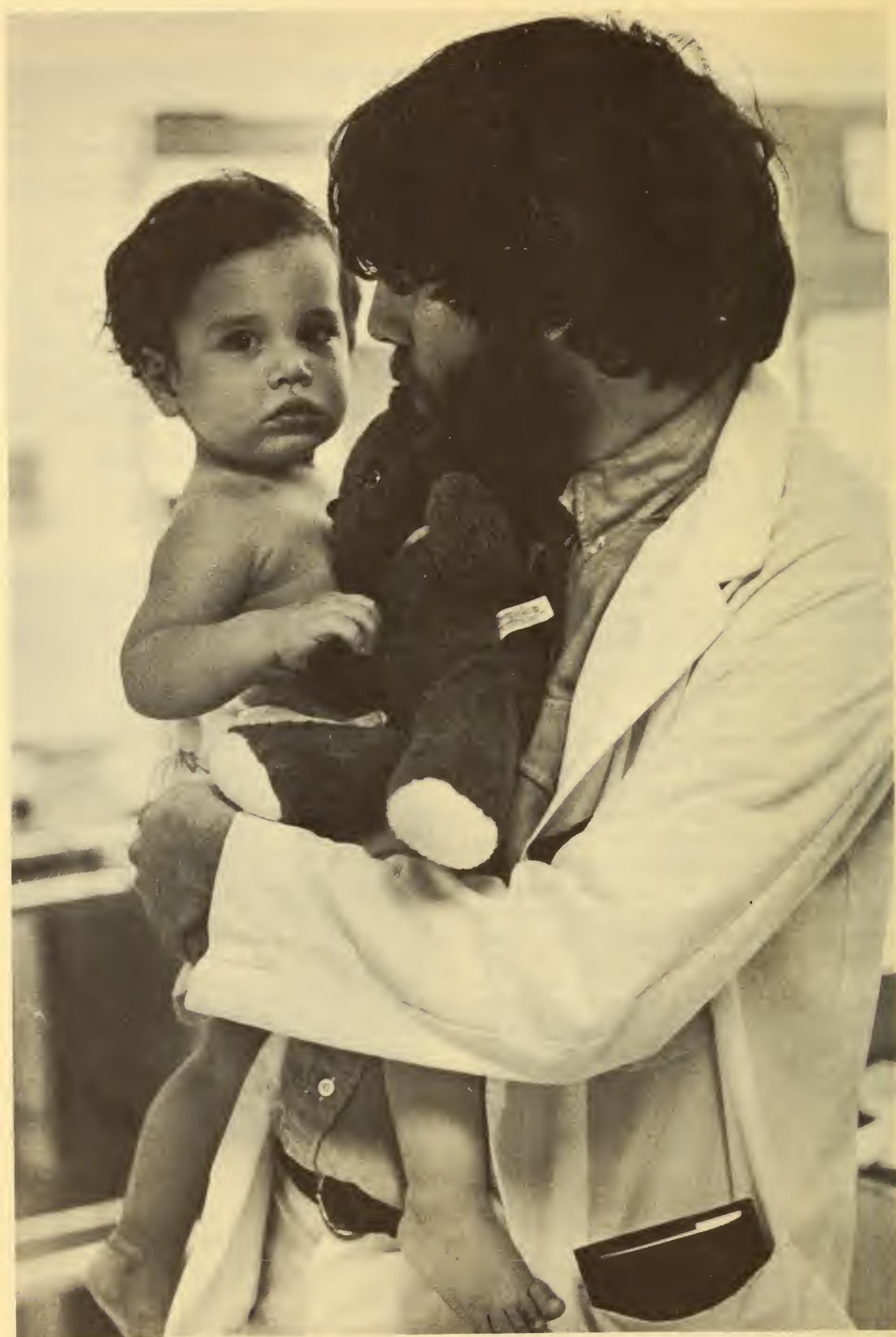
trends as well as to maintain personal contact with other graduates. At that time a general business meeting is conducted, a Board of Directors elected and approval sought of guidelines and actions to govern the group's activities for the upcoming year.

The Medical Alumni Association is located in Davidge Hall, the oldest medical building to be used continuously for education in the nation. Annual dues help to defray expenses of the association. Inquiries and participation in the association is solicited from all affiliated with the School of Medicine. For further information write:

Medical Alumni Association  
201 Davidge Hall  
522 West Lombard Street  
Baltimore, Md. 20201







# GENERAL INFORMATION

## ADMISSIONS

The University of Maryland, in all its branches and divisions, subscribes to a policy of equal educational opportunity for people of all races, creeds and ethnic origin.

## APPLICANT SELECTION

Academic achievement, extracurricular activities, personal characteristics, recommendations from college instructors or the premedical committee, scores on the Medical College Admissions Test (MCAT) and personal interview are all carefully considered in evaluating an applicant. Academic achievement and/or high scores on MCAT do not in themselves ensure acceptance. Of equal concern to the Committee on Admissions are the applicant's personality, character, motivation, sincerity of purpose and an assessment of the applicant as a potential physician. Communication skills, honesty, integrity, acceptance and carrying out of responsibility and involvement in activities in the area(s) of the applicant's interest(s) must also be demonstrated.

Matriculants are required to accept the provisions of the Honor Code and agree to assume its obligations prior to registration. A copy of the Honor Code and agreement form is sent to each candidate with notice of acceptance. However, the Honor Code is currently

undergoing review and this information is subject to change.

Applications from persons with outstanding credentials from other areas of the United States and Canada are welcome and will receive all possible consideration. However, preference in the selection process is given to residents of the State of Maryland. Because of the large number of persons applying, applications can be processed only from citizens of the United States or Canada. A permanent alien immigrant is considered as being a citizen for selection purposes.

## RESIDENT AND NON-RESIDENT STATUS

Students who are minors are considered to be resident students if at the time of their registration their parents have been domiciled in the State of Maryland for at least six months.

The status of the residence of a minor is determined at the time of his first registration in the University and may not thereafter be changed by him unless his parents move to and become legal residents of Maryland by maintaining such residence for at least six months. However, the right of the minor student to change from a non-resident status to a resident status must be established by his parents or legal guardian prior to the registration period set for any semester.





Adult students are considered to be residents if at the time of their registration they have been domiciled in Maryland for at least six months provided such residence has not been acquired while attending any school or college in Maryland or elsewhere. An adult may change his status from non-resident to resident by withdrawing from the University for six months and remaining in the state as a civilian not enrolled in any other institution for more than eight hours of credit. Time spent on active duty in the armed services while stationed in Maryland will not be considered as satisfying the six months period referred to above unless the individual's home of record on his military records is Maryland. In the case of both military personnel and adults, residence may be established through ownership and maintenance of a home in the state which is the student's primary place of domicile.

Procedures are available for reviewing resident status of students. Individuals seeking to appeal the decisions concerning their residence status should contact the Office of Admissions.

The word "domicile" as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

## ADMISSION TO FIRST YEAR

Careful attention should be given to the selection of elective courses particularly in the sciences. Usually the student should plan a four-year curriculum with a suitable arts and science major leading to a bachelor's degree. A major in an area other than science is quite acceptable although it is not intended to divert students from a science major if this is their field of choice. The opportunity to place out of biochemistry by written examination is offered.

Applicants who choose a non-science major should take a sequence of science courses which demonstrates their academic ability to handle the demands made by a science-oriented curriculum.

A minimum of 90 semester hours of acceptable college credit is required exclusive of physical education and military science, earned in colleges of arts and sciences whose names occur on the current list of "Accredited Institutions of Higher Education" as compiled by the National Committee of Regional Accrediting Agencies of the United States. Applicants who will have earned a bachelor's degree in arts and sciences before registration for medical school from an approved college or university will be given preference over applicants



who have not completed the requirements for the bachelor's degree. Only those courses will be acceptable which are approved for credit towards a degree by the university or college attended as well as the University of Maryland.

The following college courses and credits at an acceptable level are required before registering for medical school.

	Semester Hours
General biology or zoology	8
Inorganic chemistry	8
Organic chemistry	6
General physics	8
English	6

No more than 60 hours can be accepted from accredited Junior Colleges and then only if these credits are validated by a college offering a Bachelor of Arts or Science degree.

A letter of evaluation is required from the undergraduate premedical committee for those applicants still enrolled in or recently graduated from undergraduate college. If there is no premedical committee, letters are requested from two science and one non-science course instructors. When letters from other sources are sent, they should be only from persons who can candidly and criti-



cally evaluate the applicant's accomplishments, productivity and character. Consequently, such letters are usually from individuals who have supervised the applicant in some special experience in the applicant's area of interest or work. In any case, all letters of evaluation should be sent *directly* to the Committee on Admissions; they are *not* to be sent to the American Medical College Application Service (AMCAS).

An evaluation of the applicant's credentials is made by members of the Committee on Admissions to determine if an interview is to be requested. This decision is based upon a composite estimate of the applicant's ability and future promise in the field of medicine as measured by his academic record to date, performance on the Medical College Admissions Test (MCAT), recommendations of the premedical faculty, extracurricular activities, an assessment of the applicant's personal characteristics and the applicant's overall standing as compared to that of the other applicants applying that year. Such interviews must be scheduled in advance at the initiative of the Committee.

The Medical College Admissions Test usually is taken in the Spring and must be taken no later than the Fall of the year preceding the year of entrance. Applicants should write the American College Testing Program, P. O. Box 414, Iowa City, Iowa 52240, for further information and for registration forms.



In the selection process, the Committee on Admissions must use as the applicant's residency status that which is in effect on the last day applications can be received (December 20).

For further information regarding the admissions process in general, the applicant is referred to a booklet entitled "Medical School Admissions Requirements" which can be obtained from the Association of American Medical Colleges, Suite 200, One Dupont Circle, NW, Washington, D.C., 20036, at a cost of \$4.00.

## APPLICATION

The School of Medicine participates with the American Medical College Application Service (AMCAS) and all requests for a place in the first year class must be initiated by an AMCAS application. AMCAS application request cards can be obtained from AMCAS, Suite 301, 1776 Massachusetts Ave., NW, Washington, D.C., 20036, and the Committee on Admissions, University of Maryland School of Medicine, 660 W. Redwood, Baltimore, Md., 21201. They are also usually available from the pre-medical advisory office at the undergraduate college. AMCAS application material is usually available for distribution about mid-June of the year prior to the year the applicant wishes to enter medical school.

For the School of Medicine, the AMCAS application is the first of a two stage application process. The Committee on Admissions thoroughly reviews the AMCAS application and based on the information contained in it determines whether the second stage (School of Medicine) application form can be sent. An application fee to the School of Medicine is due only with the filing of the second stage application form. Every applicant will either be sent second stage application material or be informed that the Committee cannot continue the application process.

It is very definitely in the best inter-



ests of the applicant to file the application form and supporting credentials early in the application period. Please do not have supporting credentials sent prior to filing a final application.

It is the responsibility of the applicant to see that all required credentials and the completed application packet are filed with and received by the Committee on Admissions.

## NEW STUDENT ORIENTATION

All new students, whether they are admitted to the first year class or with advanced standing, are expected to attend an orientation for new students.

## ADVANCED STANDING

Students who have attended medical schools in the United States are eligible to file application for admission to the second and third year classes only. These applicants must meet the current first year entrance requirements in addition to presenting acceptable medical school credentials and a medical school record based on courses which are equivalent to similar courses in this school.



Application for advanced standing must be made no later than April 15 of the year of desired admission.

No student can be considered who has been dismissed from any medical school unless his former dean submits a letter addressed to the Committee on Admissions stating that the student is reinstated in good standing and eligible for promotion.

No student can be considered who is not eligible for promotion at the time of transfer.

Persons who already hold the degree of Doctor of Medicine cannot be admitted to the medical school as a candidate for that degree from this University.

The School of Medicine cooperates with the Coordinated Transfer Application System (COTRANS) of the Association of American Medical Colleges. Further information about COTRANS can be obtained by writing COTRANS, Suite 200, Association of American Medical Colleges, One Dupont Circle, NW, Washington, D.C., 20036. All applicants who wish to apply to the School of Medicine for advanced standing on the basis of academic work completed at a medical school outside the United States or Canada, must do so through the COTRANS procedure. Such applications can be considered only for advanced standing into the third year. In addition to satisfying all eligibility requirements of COTRANS, the applicant must be a *resident* of Maryland and must successfully complete Part I, National Board of Medical Examiners. To apply under the COTRANS procedure, the applicant must register with COTRANS and also submit an application form for advanced standing to the School of Medicine.

## REQUIRED EQUIPMENT

### Dissecting Instruments

At the beginning of the first year, all freshmen must possess a complete set

of dissecting instruments similar to the ones on display in the bookstore.

### Microscopes

All freshmen must also provide themselves with a standard microscope. All microscopes must conform to the following specifications:

(1) For frequent and prolonged use, a binocular microscope is preferable to a monocular type instrument and is therefore strongly recommended.

(2) 10X oculars; wide field oculars are recommended, but not required.

(3) Quadruple nose piece.

(4) Four parfocal objective lenses, viz.,

30 mm., 4X, 0.1 N.A.

16 mm., 10X, 0.25 N.A.

4 mm., 43X, 0.65 N.A.

1.8 mm., 97X, oil immersion, 1.25 N.A.

(5) Mechanical stage to accommodate standard size microscopic slides; the stage need not be graduated.

(6) Built-in, on-base light source; a variable transformer is recommended.





(7) Substage condenser; Abbe or variable focus.

(8) A carrying case is recommended.

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some of the older instruments are in poor optical or mechanical condition, and in addition, some are equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard hemocytometer cover glass without breakage.

All microscopes will be checked during the first scheduled laboratory in histology.

### Other equipment

Other instruments and equipment may be needed. The student will be informed of these needs by the department involved at an appropriate time.



## GENERAL RULES

The University authorities reserve the right to make changes in the curriculum, the requirements for advancement and graduation, fees and in rules and regulations whenever appropriate.

Students who report for classes later than one week after the scheduled time will be permitted to begin work only by permission of the dean.

Attendance at all scheduled classes is expected.

Notice of change of address should be submitted promptly to the Dean's Office and to the Registrar's Office.



## TUITION, FEES AND REGISTRATION

### Current Fees

	<i>Fall</i>	<i>Spring</i>	<i>Total</i>
Application Fee <sup>1</sup>			
Matriculation Fee (New Students)	\$ 15.00		\$ 15.00
Fixed Charges—Residents	535.00	\$ 535.00	1,070.00
Fixed Charges—Non-Resident	1,085.00	1,085.00	2,170.00
Instructional Resources Fee	15.00	15.00	30.00
Student Activities Fee	11.75	11.75	23.50
Student Health Fee	5.00	5.00	10.00
*Hospital Insurance (Individual)	45.96	45.96	91.92
Supporting Facilities Fee	30.00	30.00	60.00
Dormitory Fee	236.00	236.00	472.00
Graduation Fee—Seniors		15.00	15.00

*\* Hospital insurance is required of all fulltime students. A brief outline of the student health insurance program is furnished each student. Students with equivalent insurance coverage must provide proof of such coverage at the time of registration and obtain a hospital insurance waiver. Rates are subject to change.*

<sup>1</sup> An application fee of \$15.00 should be submitted with the formal application to the School

of Medicine. This fee will be applied against the matriculation fee for accepted students. A deposit on tuition of \$50 is required of all applicants before the expiration date specified in the offer of acceptance. The deposit will be credited against first semester charges. In the event of withdrawal before registration, the advanced deposit will be returned on request, if requested before March 1.

### REGISTRATION

For the fall semester, all students after proper certification are requested to complete a set of registration cards in the Office of Student Affairs. All students are expected to complete the registration, including the payment of bills on the registration days. Those who do not complete their registration on the prescribed days will be charged a fee of \$20.00.

One-half of academic yearly fees are payable on the date specified for registration for the first and second semesters. Blue Cross hospitalization for six months in advance is paid at the beginning of each semester. Fourth year students shall pay the graduation fee, in addition, at this time.

Any enrolled student may request at registration the postponement of payment of one-half his fixed charges for a semester; all other fees are due and payable. For this service a charge of \$2.00 will be made.

If semester fees are not paid in ac-

cordance with the foregoing on the specified registration dates, a penalty of \$20.00 will be added.

If a satisfactory settlement or agreement for settlement is not made with the Business Office within ten days after a payment is due, the student automat-







ically is debarred from attendance at classes and will forfeit the other privileges of the medical school.

A student who is eligible for reexamination must secure a bill from the Registrar's Office, make payment to the cashier for each subject in which he is to be examined and present the receipt to the faculty member giving the examination before he will be permitted to take the examination.

## WITHDRAWAL AND REFUNDS

Students desiring to leave the School of Medicine at any time during the academic year are required to file with the dean a letter of resignation. The student must satisfy the authorities that he has no outstanding obligations to the school and return his student identity card.

If these procedures are not completed, the student will not be entitled to honorable dismissal nor to refund of fees.

Students under 21 years of age must supplement the procedures previously described with the written consent of their parents or guardians.

*Academic standing*—Students who voluntarily withdraw during an academic semester will be given no credit.

Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded at the Registrar's Office. Students who withdraw from the medical school and later desire readmission must apply to the Committee on Admissions unless other arrangements have been consummated with the dean's written consent.

*Refunds*—Students who are eligible to honorable dismissal will receive a refund of current charges after the matriculation fee has been deducted according to the following schedule, based on elapsed time after instruction begins:

Two weeks or less	80 per cent
Between two and three weeks	60 per cent
Between three and four weeks	40 per cent
Between four and five weeks	20 per cent
After five weeks	0 per cent

*Leaves of Absence*—Students who are in good standing may be granted one year's leave of absence on request to the dean. Longer leaves can be arranged



only under special circumstances except those students in the combined MD-PhD program.

## FEES

The *application and/or matriculation fee* partially defrays the cost of processing applications for admission and enrollment data in the professional schools. These fees are not refundable.

The *continuous registration fee* is applicable to students who have been advanced to candidacy and who have completed required credit hours, but who have not completed the thesis or dissertation.

The *student health fee* is charged to help defray the cost of providing a Student Health Service. This service includes routine examinations and emergency care. Acceptable medical insurance is required in addition to the student health fee.

The *diploma fee* is charged to help defray costs involved with graduation and commencement.

The *instructional resources fee* is charged to provide supplies, materials, equipment and other costs directly associated with the instructional program.

The *student activities fee* is used to meet the costs of various student activities, student publications and cultural programs. The Student Government Association in cooperation with the dean's office recommends expenditure of the fee collected.

The *supporting facilities fee* is used for expansion of various facilities on campus that are not funded or are funded only in part from other sources.

The *fixed charges fee* is a charge to meet a part of the costs for the educational program and supporting services.

A *service charge* is assessed for dishonored checks and is payable for each

check which is returned unpaid by the drawee bank on initial presentation because of insufficient funds, payment stopped, postdating or drawn against uncollected items.

For checks up to \$50—\$5.00

For checks from \$50.01-\$100—\$10.00

For checks over \$100—\$20.00

The *late registration fee* is charged to defray the cost of special handling involved for those who do not complete their registration on the prescribed days.

No degree will be conferred, nor any diploma, certificate or transcript of record issued to a student who has not made satisfactory settlement of his account.

The University reserves the right to make such changes in fees and other charges as may be necessary.







Advancement Committee, be dismissed. All "F" grades must be absolved prior to graduation.

The faculty reserves the right to determine if a student may withdraw, repeat, advance or graduate on academic or moral and personal grounds, including traits of character.

All discretionary actions of the Advancement Committee are subject to ratification by the School of Medicine Council and must be presented to them at their next meeting.

## INTERNSHIPS, RESIDENCIES AND FELLOWSHIPS

Graduate specialty programs for interns, residents and fellows at the University of Maryland Hospital are approved by the Council on Medical Education and Hospitals of the American Medical Association and in dentistry by the American Dental Association.

The 45 approved intern positions are filled through the National Internship Matching Program. The program includes rotating internships and straight internships in family practice, medicine, obstetrics-gynecology, pathology, pediatrics and surgery.

Approximately 270 resident and fellowship positions are available in the following specialty areas:

Department of Anesthesiology: anesthesiology

Department of Dentistry: oral surgery

Division of Family Practice: family practice

Department of Medicine: cardiology, dermatology, endocrinology, gastroenterology, infectious diseases, internal medicine, nuclear medicine and renology

Department of Neurology: neurology

Department of Obstetrics and Gynecology: obstetrics-gynecology

Department of Ophthalmology: ophthalmology

Department of Pathology: clinical and anatomical pathology

Department of Pediatrics: pediatrics and pediatric allergy

Department of Psychiatry: psychiatry and child psychiatry

Department of Radiology: radiology and radiation therapy

Department of Rehabilitation Medicine: rehabilitation medicine

Department of Social and Preventive Medicine: preventive medicine

Department of Surgery: general surgery, neurosurgery, orthopedic, otolaryngology, thoracic and cardiovascular and urology

Appointments to internships and residencies are made by the director of the hospital upon recommendations of the housestaff committee of the Medical Board or, in the case of residents, upon the recommendation of the appropriate clinical department chairman. Correspondence and applications should be addressed to:

Internships

The Director

University of Maryland Hospital

22 South Greene Street

Baltimore, Md. 21201

Residencies should be addressed to the chairman of the respective department or division at the same address.





## ADDITIONAL EDUCATIONAL PROGRAMS

### BACCALAUREATE DEGREE

Selected students entering the School of Medicine from colleges which usually grant a baccalaureate degree after the successful completion of the first year of medicine, are responsible for: (1) providing a certificate from his college or university that he is eligible for this degree, and (2) meeting all requirements of the School of Medicine for advancement to the second year.

### GRADUATE PROGRAM

Graduate courses and research opportunities leading to advanced degrees are available in most of the basic science departments of the School of Medicine. Students pursuing graduate work must register in the Graduate School of the University of Maryland and meet the same requirements as other graduate students. A catalog of courses and information concerning the graduate programs offered at the University of Maryland at Baltimore can be obtained from the Office of the Dean for Graduate Studies and Research, University of Maryland at Baltimore, Baltimore, Md., 21201.

### COMBINED PHD AND MD PROGRAM

Properly qualified medical students may elect to enter the combined educational program leading to Doctor of Medicine and a graduate degree. Such students may arrange a leave of absence of up to three years at the end of their second or third year in medical school to become candidates for either the MS or PhD in one of the basic medical sciences. Before entering the combined program, students must meet the requirements for admission to the Graduate School and be acceptable to the department of their choice as a candidate for advanced degree.

## CONTINUING EDUCATION

The University of Maryland School of Medicine is concerned about three phases of a physician's education: undergraduate, graduate and postgraduate or continuing education. Recognizing its responsibility to the people of Maryland, the medical school strives to make continuing education as meaningful and as available to the state's physicians as possible. Such a commitment is fulfilled in the program of postgraduate education.

All professionals, but especially physicians, are called upon by society to continue to learn. The individual physician must bring to his own practice, wherever he may be located, new medical knowledge that continuously becomes available. Thus, not wishing to face rapid obsolescence, the physician seeks ways of continuing his learning. This is accomplished in various ways including reading in medical journals and in textbooks; consultations and conferences with his peers about his clinical problems; other organized conferences within his areas of interest, usually held at a convenient teaching hospital, and special programs and workshops which bring new developments into focus in areas of relevance or of special need. The reward the doctor receives for these efforts and the benefit to the patient, is the improved health care of his patients.

The program in postgraduate education is dedicated to this philosophy. A committee, made up of interested faculty members with additional representation from organized groups who represent practicing physicians, annually prepares a comprehensive program designed to provide relevant and new information to Maryland physicians. Both the type and the manner of the program, as well as their instructional design, are varied so as to satisfy the learning needs of as many physicians as possible. A special effort to provide learning situations in the local hospital



and other health care settings where the physician daily interacts is made in order to make this information easily available. A natural basis for meeting this goal is the affiliations program of the School of Medicine. On a voluntary basis, the medical school provides advice and expertise for local continuing education activities. A wide variety of one to three day symposia are presented each year on general and subspecialty topics of current interest. Other courses are offered also on the University campus and range from weekly grand rounds in the various major disciplines of medical practice to special evening refresher courses.

Another important effort is the opportunity given practicing physicians who wish to return as a trainee to the medical center. The physician, based on individual determination of his desires and needs, enters a refresher course of graduate training for a limited period of time. During this time, which can vary from one to several weeks, the trainee serves in the area of his interest working closely with housestaff, medical students and fulltime faculty. He participates actively in the management of patients, attends pertinent conferences and has special tutorial sessions with preceptors who guide his reading and comprehensive review of the area

of his interest. Also under development is a variety of other mechanisms which will make the resources of the medical school available for instantaneous consultation with practitioners throughout the state. Through the Office of Medical Education a lending library of audiovisual and other aids will also be available. A major effort is made to keep all practitioners informed about special events occurring on the medical school campus.

Of course, close contact is maintained between the other providers of continuing medical education within Maryland. Thus, the medical school participates in the planning of the programs at the annual and semiannual meetings of the Medical and Chirurgical Faculty of Maryland as well as local medical societies and other special groups who provide continuing education to community-based physicians.

The program at Maryland is administered by a program director, an associate director and a fulltime staff as well as a Committee on Postgraduate Education. The special events offered through this program are fully approved by the American Medical Association and thus qualify for its physician recognition award. This program can also be used by a physician to meet the Maryland requirements for relicensure.







# COURSES OF INSTRUCTION

## ANATOMY

The Department of Anatomy provides courses in the various aspects of basic medical science which are included under the general term anatomy. Courses are offered to both medical students and students working towards a MS or PhD. In the educational field the primary goal of the department is to enable students to obtain a basic understanding of the structure of the human body as it is related to function. Where relevant, important clinical and research applications of the material under study are described. The study of human structure includes all levels from the gross morphology, which is seen in the dissecting room, to that of fine structure as revealed with the electron microscope. Special emphasis is placed on the study of neuroscience where neuroanatomy is taught in an integrated format with neurophysiology and other aspects of neurology.

Anatomy is a wide-ranging and comprehensive subject, a basic knowledge of which is essential to the proper understanding of clinical practice. Being a broad and relatively precise discipline

its study inevitably places a heavy demand upon each student's ability to study in his or her own time. Accordingly, the courses are designed more to help students with their own learning process than to provide a comprehensive treatment of the material under study. For this reason both a theoretical and laboratory approach is adopted in course work, and materials are made available for individual study. Placement examinations are held to enable students with a prior knowledge of the material to gain exemption and to use the time thus made available more effectively for the pursuit of their own special academic interests.

All fulltime members of the department are actively engaged in research. The diversity of this research reflects a wide range of interests of both a pure and an applied nature. Research projects presently under study include topics on physical anthropology, electromyography, carcinogenesis, immunology and histophysiology of many of the body systems.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

MANA 301—*Human Anatomy*—First and second semesters. This course is primarily designed for students of Physical Therapy. A prerequisite is 8 credit hours of zoology. The course provides

a basic concept of the anatomy of the human body through a correlation of histology, gross anatomy, and neuroanatomy. Laboratory work includes dissection of the human body.

MANA 351—*Biomechanics and Kinesiology*—First semester. This course is primarily designed for students of Physical Therapy. Prerequisites for

this course include physics and anatomy. The course provides a detailed study of motion in the human body with emphasis on its mechanical and functional aspects. It is designed to include observation and analysis of movement as it occurs in man under both normal and pathological conditions.

**MANA 505—Genetics**—This course is primarily designed for nursing students. Basic principles of human and medical genetics are stressed with attention given to underlying mechanisms of genetic disorders of man. Other areas developed are congenital malformations, developmental genetics, probability and genetic counseling.

**MANA 506—Embryology**—An introductory course in the study of embryology is provided for students who have not previously studied the subject. The purpose of the course is to provide a background sufficient for an understanding of the study of the development of the body systems included in MANA 511.

**MANA 511—Anatomy of the Human Body**—The purpose of this course is to provide the student with a comprehensive understanding of the morphology of the human body. The basic concepts of structure as they are related to function are described in lectures and demonstrations and through audiovisual media. Laboratory facilities are provided for the study of osteology and projected material and for dissection of the human body. The course includes instruction in living anatomy, embryology, roentgen anatomy and important clinical applications.

**MANA 512—Histology**—The purpose of this course is to provide the student with a basic knowledge and understanding of the microscopic structure of the human body. The interdependency between structure and function in the different tissues and organs of the body is emphasized. Clinical and research applications of the

course material are also stressed. Histological slides are provided for laboratory study and audiovisual material is available for individual study.

**MANA 513—Neurological Sciences**—This course provides an integrated study of neuroanatomy, neurophysiology, neuropathology, neurosurgery and electroencephalography. The structure and function of the central nervous system is presented simultaneously. Facilities are provided for dissection of the human brain, examination of stained microscopic sections of various levels of the brain stem, and laboratory experience involving the study of functional aspects of the nervous system.

**MANA 514—Genetics**—This course comprises a series of one-hour lectures which include a basic consideration of the principles of genetics, population genetics, biochemical genetics, radiation genetics, immunogenetics and microbial genetics. Laboratory facilities are provided for an introduction to the study of cytogenetics. Special emphasis is placed on the role of genetics in health and disease.

#### *Fourth Year*

**MANA 541—Gross Anatomy Elective**—The opportunity is provided for clinical students to review and study, in further depth, areas of anatomy appropriate to their special interests. Material is provided for dissection. The work may be carried out as a separate elective or in conjunction with a clinical elective by arrangement with the appropriate department.

**MANA 542—Special Anatomy Electives**—Clinical students may take as an elective any of the special courses which the department offers to graduate students working towards an MS or PhD degree. These courses are listed in the Graduate School catalog.

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## ANESTHESIOLOGY

During the first two years, the Department of Anesthesiology participates in lectures, conferences and laboratory exercises of various preclinical departments. Such participation is intended to illustrate the application of basic science principles to the clinical practice

of anesthesiology. Emphasis is placed upon the physiologic and pharmacologic basis for preanesthetic medication, choice of anesthesia and management of patients before, during and after surgery.

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**ANES 540—Introduction to Anesthesiology**—Each senior serves a clinical clerkship in the

department at University of Maryland Hospital or one of the medical school's affiliated hospitals. Practice experience is gained in the preparation of the patient prior to anesthesia and surgery, the management of anesthesia and the postoperative

care of the surgical patient. Informal small group sessions are held to emphasize factors affecting anesthetic management and to discuss pertinent anesthetic problems. Experience is provided in management of the unconscious patient, with particular attention to the airway and cardiopulmonary resuscitation. Students attend the regularly scheduled staff conferences of the department. Special interest experiences are also available in obstetrical anesthesia and in the respiratory division of the department.

**ANES 541—*Anesthesiology Elective***—The objectives of this elective are: (1) to provide broad insight into the practice of anesthesiology, its background, its relevancies to virtually all aspects of patient care, its technical considerations, its challenges and its problems; (2) to develop and cultivate an appreciative understanding of the significance and application of the basic sciences in this branch of medical practice, and (3) to demonstrate the functions of this specialty in activities outside the operating room, in the postanesthesia observation room (recovery room), intensive care units, obstetrics, respiratory care, pain problems and cardiopulmonary resuscitation. The time devoted to each aspect of the specialty will be governed by the career goals of the individual student.

**ANES 542—*Obstetrical Anesthesia Elective***—The elective is designed to introduce the student to the principles and practices of pain control during labor and delivery. In addition to comprehending basic principles of obstetrics and anesthesiology, the student will integrate his knowledge of clinical physiology and pharmacology. Obstetrical anesthesia involves the simultaneous management of two or more patients (the mother and her offspring) and the peculiarities and difficulties encountered including resuscitation of the newborn. This experience should be

especially valuable to the student contemplating a career in anesthesiology, obstetrics or family practice.

**ANES 543—*Management of Pulmonary Insufficiency Elective***—This course provides the student with an understanding of the pathophysiology, diagnosis and management of pulmonary insufficiency. The Respiratory Division in association with the Division of Pulmonary Disease of the Department of Medicine, will present a two-part program: (A) anesthesiology—acute postsurgical and posttraumatic respiratory insufficiency including head injury, and (B) medical—respiratory insufficiency associated with obstructive and restrictive pulmonary disease. Included in the course will be management of the upper airway, pulmonary function testing, blood gas/acid base analysis and interpretations and functional analysis of mechanical ventilators. Although the combination of 543 (A) and (B) are recommended, either may be elected separately.

**ANES 544—*The Principles and Practice of Anesthesiology Elective York (Pa.) Hospital***—This course provides the basic introduction into the practice of anesthesiology within the framework of an active group practice and within a busy community hospital. This will include an introduction to basic science principles and their application to patient care on a continuous basis. The student will participate in all phases of this care, including preoperative preparation, intraoperative management and postoperative care. He will also be involved with those aspects of anesthesia practice that do not involve operative surgery; such as respiratory care, pain clinic, cardiopulmonary resuscitation and consultation. The depth of the experience will be governed by the duration of the elective and the career goals of the individual student.





## BIOLOGICAL CHEMISTRY

Biochemistry is the subject which seeks to understand the phenomena of biology in terms of molecular structure and interaction. As such it permeates all of biology and medicine and is a fundamental prerequisite to other medical sciences, especially pharmacology, microbiology and pathology as well as the clinical subjects.

One of the teaching goals of the department is to present to the medical class a concise but comprehensive lecture-conference course including major traditional subjects: proteins, enzymes, nucleic acids, intermediary metabolism of major food stuffs, energy production and utilization, chemical aspects of hormones, protein and nucleic acid biosynthesis and biochemical genetics. Because many entering students students have had some exposure to bio-

chemistry, the department offers place-out examinations and advanced seminar courses for medical students. In addition, the introductory medical course includes a systematic series of sessions organized by the Department of Medicine which demonstrate the application of biochemistry to the understanding of human metabolic disorders.

The department also offers a doctoral program and a series of advanced courses (see Graduate School catalog). Research interests of the staff include a number of areas in metabolism and enzymology (both mammalian and microbial), transport and membrane biochemistry, enzymology and regulation of melanin pigmentation, collagen structure and metabolism, hemoglobin biochemistry and viral morphogenesis.

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

**MBIC 510—Biochemistry**—An introduction to the later preclinical and clinical subjects, the course is presented in the first semester and is oriented toward mammalian metabolism and enzymology and those aspects of general biochemistry common to all organisms. Conferences are offered throughout the semester. They allow enrichment of the core material and have the added advantage of smaller groups. A separate, but closely correlated course, correlative medicine, brings clinical correlation to the biochemical material in a series of weekly presentations of scientific clinical lectures, sometimes centering around a patient.

#### *Fourth Year*

**MBIC 548—Research Elective**—This elective gives the student the opportunity to work with various faculty members in the following areas: (1) amino acid metabolism, collagen structure and metabolism, and amino acid racemases and epimerases; (2) biochemistry and genetics of virus development and assembly as well as regulation of development; (3) physical-chemistry and chemistry of proteins; (4) microbial metabolism and physiology as well as membrane transport of amino acids; (5) regulation of enzyme action by allosteric interactions; (6) melanin formation and its regulation in mammals, and (7) membrane structure and function in microbial systems.

## BIOPHYSICS

It is the aim of the Department of Biophysics to provide medical students with a background in the physicochemical principles necessary to an understanding of physiology and the neurosciences.

The department offers a program of graduate study leading to the PhD degree. Study programs are flexible and depend on the preparation and interests

of the student. Arrangements for a combined MD-PhD program are available on an individual basis.

Information regarding requirements, graduate courses offered, and research interests of the staff are available from the department at 660 W. Redwood Street, Baltimore, Md. 21201. Deadline for graduate applications is March 1.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBPH 510—Principles of Biophysics**—The course of biophysics for medical students is intended to provide a background in the physicochemical principles necessary for an understanding of subsequent courses in physiology and in the neurosciences.

### *Fourth Year*

**MBPH 541—The Application of Computers to**

**Medicine Elective**—This is a program to introduce the student to the potentialities for the utilization of computers in medicine. Each student will have an opportunity to acquire experience using a teletype terminal to interact "conversationally" with one of several computers. The techniques needed to undertake digital simulation of physiological processes (modeling), statistical analysis, plotting and FORTRAN programming will be presented. To benefit from this course, a student should have a mathematical sophistication at least at the level of college calculus.

## CELL BIOLOGY AND PHARMACOLOGY

The primary aim of the Department of Cell Biology and Pharmacology is to provide the undergraduate medical student with basic information underlying the rational use of therapeutic agents. Emphasis is placed on general principles of drug metabolism and distribution, mechanisms of action and possible complications of drug administration.

Research interests in the department are primarily at the cellular and sub-cellular level. At the present time, there

are active programs in the areas of viral structure and function, enzyme action, drug metabolism, chemical carcinogenesis and growth inhibition. Opportunities are provided for medical, graduate and postdoctoral students to participate in this work at all levels of investigation.

The department has a graduate program leading to a PhD in pharmacology. Arrangements for combined MD-PhD training are also available on an individual basis.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

**MCBP 520—Medical Pharmacology**—The pharmacological basis for therapeutics is presented with an emphasis on the mechanism of drug action.

## FAMILY PRACTICE

Family medicine at the School of Medicine is considered to be a specific academic as well as a medical care discipline. Training for those interested in becoming family physicians begins soon after entrance into medical school, continues through the undergraduate curriculum, extends into an approved residency training program and is continued throughout the active practice years in special continuing medical education programs.

The goal of the family practice program is to train family physicians specifically skilled to serve at a point of entry into the health care system. This training prepares them to accept responsibility of their patient's or family's total health care, in a continuing and comprehensive manner, regardless of age and within the context of any given environment. The "holistic" approach to medical care is stressed and includes preventive, prospective, epi-

sodic, emergency, inpatient, ambulatory, advisory, rehabilitative and counseling techniques.

The school provides an equal academic opportunity for all of those who choose family practice as a way of professional life by providing for an adequate program with a fulltime staff of experienced family physicians, a sphere of clinical responsibilities, a model family practice setting and a "track" which medical students will be able to follow in the developing curriculum from the MD degree to the postgraduate years. Such a program is made possible by the

## UNDERGRADUATE MEDICAL PROGRAM

At the time of this printing, the medical school is revising its entire curriculum. The proposed curriculum will have an elective track in family practice. Presently, the following electives are offered:

### *First Year*

*Introductory Family Practice Preceptorships Elective*—The freshman student is provided an early opportunity to have patient contact in a community setting in the private physician's office. This is a brief office visitation experience conducted on a half day a week basis in the second semester. This encounter will serve to begin to relate the biologic fundamentals that the student is busy accumulating for practical use in patient care.

### *Second and Third Years*

*Extended Family Practice Preceptorship Elective*—These preceptorships should enable the student to gain insight into a medical way of life of a family physician in private practice in a community and to demonstrate what family practice is, the varied scope of the family physician's work and the diverse problems encountered. This experience will serve to clarify for the student the physician's place in society, his social and civic obligations and his responsibilities to his patients. Thus, the student may more fully grasp the true nature of private practice and the need to understand each patient in relationship to his family, his job and his total environment.

The preceptorship provides a brief period away from the medical school setting during which the student can develop mature ideas concerning his own values and goals. Observation of the practicing physician in his working environment affords the student an opportunity to de-

velop a true perspective of the patient-physician relationship. It also permits the student to participate almost totally in a "medical way of life" with a dedicated physician carefully selected by the medical school.

extensive interdisciplinary teaching approach being developed in conjunction with the departments of internal medicine, pediatrics, psychiatry, obstetrics and gynecology and surgery, as well as many of their related subspecialty areas.

The teaching vehicles used are the assignment of a spectrum of representative families, a model family practice partnership office, preceptorships, community hospital exposure, community health participation, locum tenens programs and research in basic health care.

velop a true perspective of the patient-physician relationship. It also permits the student to participate almost totally in a "medical way of life" with a dedicated physician carefully selected by the medical school.

### *Fourth Year*

*FAPH 541—Introduction to Family Practice Elective*—A longitudinal exposure to the provision of primary continuing and comprehensive medical care within the context of the family and community. The purpose of this course is to expose the student to family practice as a basic health care system in a model family practice office working with practicing physicians. The student will be exposed to a model business office, the total life health record, the model family office laboratory, the model family practice partnership and an appropriate exposure to the medical economics of practice. Discussions will be conducted as to how to select a community to practice in and how to set up a practice. This course is from 8-12 weeks in duration and if a student desires, he can be provided with an actual private practice experience at the conclusion of this elective.





*Advanced Preceptorship Elective*—The preceptee (student) would serve with a family physician (preceptor) and be given an opportunity to observe and participate in family practice in an actual practice set up. He would be expected to work the same hours as a family practitioner and in essence to be his assistant. Under supervision of the preceptor, he would be assigned his own patients and families to work up. He would be expected to recommend a course of treatment and to follow these families during the period of preceptorship. He would work with his preceptor in every facet of the family practitioner's practice—his office, in the patient's home, his hospital, nursing home, extended care facility, with his hospital staff, county medical society, community service organization, community school system and his social service and local health departments.

In addition to the desired clinical practice exposure, the preceptee will gain insight into the family physician's lifestyle by virtue of this close association not only with the preceptor's practice, but with his home, family, community and his community involvement. And, the preceptee sees first hand the community's varied medical needs and opportunities. Through the preceptee's practical experience it is hoped this will be one of the means of discovering his strengths and weaknesses.

By individual arrangement, the preceptee may or may not live with his preceptor.

The duration of this course is 8-12 weeks. Inner city, suburban or rural practice locations will be arranged, depending on the preceptee's interest. The student applicant is required to have a conference with the family practice program director before this elective is assigned in order to assure complete understanding of the elective's purpose, to assure the desired location and availability of the desired preceptorship. There is no stipend associated with the above described elective preceptorship. There is a separate family practice preceptorship (up to three months) available to seniors during their vacation period which does permit the paying of a stipend to the preceptee.

## GRADUATE STUDIES

Maryland's three year approved family practice program is historically the third oldest in the country. Its goal is to provide a full breadth of family practice training that is required by the essentials of a family practice residency. Governed by these essentials and implemented by innovative educational methods, built into this program is a philosophy designed to educate a physician in all aspects of modern family practice, as established in the "Core Content of Family Practice." Flexibility is built into the Maryland program to accommodate the specific need of the trainee and the basic health care needs of

the community in which he will eventually serve as an individual practitioner or as a member of a group.

Training is provided in internal medicine, pediatrics, psychiatry, obstetrics and gynecology, surgery, community medicine and related subspecialty areas by two methods—on rotation in the specific departments and as a continuum in the model family practice unit.

At the School of Medicine the model unit is known as the "Family Health Center" which is located on the first floor of the north wing of University of Maryland Hospital. The Center functions as a family practice partnership. In addition to being the home or office of the family practice resident, the Center contains demonstrations of models of (1) a total life health record system; (2) a model office clinical laboratory; (3) a model business office; (4) a model of clinical pharmacist participation, and (5) a model emergency and therapy suite.

Emergency medicine is required through the years. Family practice residents admit and care for in-hospital patients. Research requirements and opportunities are included. A unique locum tenens experience, followed by an adequate elective period, climaxes the formal residency program. Continuous attention is paid toward the goal of each candidate successfully passing the examination for certification by the American Board of Family Practice.

An optional fourth year fellowship is available by special arrangement for candidates desiring further training in one of the traditional specialties or subspecialties to meet the particular needs of the applicant and the geographical area in which he intends to practice, or those who wish to prepare themselves in careers in academic teaching or research positions in family practice.

## CONTINUING EDUCATION PROGRAMS

This phase of the Maryland program is based on the philosophy that the family physician's education must be a continuum throughout his entire practice career and for the additional purpose of preparing each graduate to successfully pass each recertification examination as required by the American Board of Family Practice. Every practicing family physician who desires, especially the Maryland graduate, is provided the opportunity of being an active faculty member of the family practice department by fulfilling the continuing education requirements.

A variety of continuing education programs is offered, ranging from specific short didactic courses to extensive in depth courses in system oriented clinical subjects, to tailored individual courses to fulfill the specific needs of a physician. Information on current and projected courses is available at all times from the Division of Family Practice on request.

## INTERNATIONAL MEDICINE

International Centers for Medical Research and Training were created under the aegis of the National Institutes of Health in accordance with objectives of the International Health Research Act of 1960. It was the purpose of this act to advance the status of international health research and training. Congress further expressed the hope that "a program through United States universities for the early development of research and research training centers with adequate field opportunities for international studies" would be established.

This program under the direction of the Office of International Research of the National Institutes of Health provided for the establishment of a research and research training center at the University of Maryland School of Medicine in March 1961. The University of Maryland International Center for Medical Research and Training has succeeded in the establishment of domestic and overseas research-training programs in Baltimore, Md., Lahore, Pakistan and Salvador, Brazil.

### GRADUATE STUDIES

The research associate program provides for post-doctoral training in the various disciplines represented within the Institute of International Medicine and affiliated departments of microbiology and medicine. In general, the program encompasses three years, two of which are spent on a field assignment.

Upon entry into the program each research associate works out in advance with his advisor a definitive plan of study and research. Assignment to divisions and appointment to advisors depends upon the candidate's background, interests and needs. The global concept of medicine is emphasized and provision is made for more advanced training in specialized aspects of international health. Following a basic orientation

Objectives of the programs are:

—To offer research training in international health problems to American physicians and allied professional workers as well as their counterparts.

—To conduct medical and allied research at the domestic and overseas sites.

—To create, through scientific endeavors, an atmosphere of mutual understanding and friendship between the host nation and the United States.

In July 1963, international health activities of the University of Maryland were consolidated under the Institute of International Medicine with departmental status within the School of Medicine. Under the present administrative arrangement, the International Center for Medical Research and Training forms the nucleus of the Institute into which other international and domestic programs are incorporated.

The Institute of International Medicine derives support from the departments of microbiology and medicine.

course, each research associate proceeds into one or another of specialized training areas. During this time he begins preceptor-type training through the mechanism of a research project which also prepares the candidate for field work.

Postdoctoral candidates with PhD, MD, and DVM degrees enter in one of several specialized programs soon after appointment to the program. These include infectious disease-microbiology, nutrition, medical entomology and epidemiology. In many instances overlapping interests will result in combined training and joint research projects. In some cases additional clinical training of physician candidates will be considered essential to the success of the overall program.

Applications should be submitted to the department chairman.

## MEDICINE

Teaching the broad and specific principles of internal medicine to students and housestaff through patient care and clinical research are the department's

principal objective. These cannot be accomplished unless patients are studied thoroughly utilizing modern medical techniques which are conducted within



an environment conducive to learning. Each subspecialty group is expected to practice the general principles of medicine and perform specialized research. When indicated for the intelligent study of patients' problems, new and specialized diagnostic procedures are provided, such as catheterization, endoscopic and isotope procedures, and application of specialized biochemical, microbiological or immunologic tests.

In their teaching, attending physicians are expected to show the practical

aspects of elaborating the medical history, perform a thorough physical examination and utilize definitive techniques which are often performed by consultative subspecialty teams. Rendering care to ambulatory patients in the medical clinics and emergency room is an aspect of practice upon which greater emphasis is placed. In the hospital and clinic settings, attempts are made to emphasize patient care and proper protection of the dignity of the individual.

## FELLOWSHIPS

**SUMMER FELLOWSHIPS**—Students who have completed their sophomore year are encouraged to seek additional training during the summer months preceding their junior studies. This training may be obtained in one of several ways. A limited number of students are appointed to clinical clerkships on the medical wards of the University of Maryland Hospital. In these positions they are responsible, under supervision, for the history, physical examination, laboratory studies and the progress notes of assigned cases.

In addition, certain of the medical subspecialty divisions provide specialized training for students as fellows during the summer months. The applicant is encouraged to apply directly to the division head. These fellowships enable the student to become acquainted with the various specialized diagnostic and research techniques, the clinical problems and therapeutic regimens peculiar to each of the medical subspecialties. Summer fellowships are available in the following divisions: cardiology (2); dermatology (2); endocrinology (2); gastroenterology (2); hematology (2); nephrology (2); infectious diseases (6-8); arthritis (1); radioisotopes (1); pulmonary diseases (6-8), and clinical physiology (2).

Interested applicants should contact the respective division head prior to January 1 of the year in which the fellowship is desired. In many instances, a fellowship award is made providing remuneration for two or three of the summer months.

**POSTGRADUATE FELLOWSHIPS**—These are available in the various specialties of medicine. For details see the specific division.

## UNDERGRADUATE MEDICAL PROGRAM

### Third Year

**MEDC 530—Clinical Clerkship**—This course consists of a clinical clerkship on the medical wards of the University of Maryland Hospital or the Baltimore Veterans Administration Hospital for

a period of nine weeks. Students are responsible, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases. They attend ward rounds and conferences in general medicine with the resident staff, attending physicians and chief of service.

### Fourth Year

**MEDC 541—Medical Clinic - Adult Ambulatory Medicine Elective**—The ambulatory adult medicine elective is divided into two choices: (1) The morning is spent in the adult medical clinic where the student has responsibility for total patient care. Opportunity is provided for followup throughout the calendar year. Supervision is by the attending staff on a tutorial basis. After completing the morning assignment, the student may spend the remainder of the day under the supervision of the medical admitting officer assisting in the management of emergencies and urgent problems. (2) The morning is spent in the medical clinic and the afternoon attending subspecialty clinic or clinics (cardiology, nephrology, endocrine, diabetic, arthritis, gastrointestinal, hematology, pulmonary or nuclear medicine). The student may attend the subspecialty confer-





ence of his choice. Opportunity is provided to explore a particular interest in depth by working directly with the director of a subspecialty clinic or the division director. The purpose of this elective program is to provide an experience for the student in the delivery of medical care.

*Ambulatory Care Elective, Maryland General Hospital*—There are three types of electives available at Maryland General. (1) Medical clinic—Seniors are taken into the clinic and each morning they are assigned one new patient and two followup patients. These patients are then reviewed by the attending physician, and each day, depending on the number of students, the patient's case is reviewed in its medical and socio-economic aspects in a group session. The student will also participate in each subspecialty clinic and assignment of patients will be accomplished by the subspecialty consultant. Interesting patients will be presented by the student and discussed by the attending physician. (2) Tutor/Preceptor—The student is assigned two new patients and two followup patients in the medical clinic each morning and these are reviewed by the attending physician. The afternoon is reserved for an association with the student and a practicing physician on the hospital's staff in his private office. (3) Screening clinic—The student works with the screening doctor who sees walk-in, nonappointment patients, referrals and followups from the emergency room. This section closely resembles a general practice type of medicine and the student is closely supervised by the physician in charge of the area.

*Ambulatory Care Elective, York (Pa.) Hospital*—This is an assignment emphasizing comprehensive, integrated medical care of the ambulatory patient. It provides exposure to and involvement with the many voluntary and governmental medical and social agencies which can help meet the varied needs of patients. The student is introduced to a wide diversity of extramural activities and resources which are available in the community. The total health care needs of the patient are emphasized.

*Problem-Oriented Ambulatory Care, Baltimore Veterans Administration Hospital Elective*—The student will be assigned to the ambulatory care area where he will function as a primary physician, using the problem-oriented record to assure continuity with past and future care. Several types of experience will be provided simultaneously: (1) screening—He will receive instruction and experience in triage principles under direct supervision of the screening staff as well as collect problem-specific data functioning as an intern under direct supervision. (2) medical clinic—The student will gain experience and instruction in problem-oriented episodic care.

*MEDC 542—Intensive Care Unit Elective, York (Pa.) Hospital*—There is primary participation in the care of medical patients suffering from a



wide range of diseases and hospitalized in a 14-bed intensive care unit. Daily bedside teaching rounds with certified internists and residents, together with instruction in techniques of monitoring, resuscitation, ventilation and hypothermy are also part of the student's experience.

*MEDC 543—Clinical Oncology Elective, Baltimore Cancer Research Center of the National Cancer Institute*—This center includes a 45-bed medical and radiological oncology service engaged in clinical research in cancer. The service admits patients referred by private physicians around the nation for investigation and experimental therapy of disease for which there is no standard effective treatment. Patients with acute leukemia, Hodgkin's disease, multiple myeloma, sarcomas and a multitude of other malignancies are regularly present on the wards. In addition to a large number of experimental treatment programs, studies of infectious complications of malignancies and their therapies are well under way. Two laminar air flow rooms provide a relatively germ-free environment for granulocytopenic and immunologically suppressed patients and are utilized in these studies.

*MEDC 548—Advanced Clinical Training in Internal Medicine Elective*—The elective is designed to provide advanced training in internal medicine that will attempt to perpetuate a comprehensive diagnostic and therapeutic approach to patient-oriented medical problems. During an

eight week period, the senior intern will be assigned to a specific ward on the third or eleventh floors of the University of Maryland Hospital. He or she will be responsible for a complete patient evaluation, including workup, management outline and therapeutic considerations and will function collaboratively with the intern-resident team, attending physician, medical consultants, chief resident and chief of service. There will be opportunities for senior students to participate in research programs of their choice while assigned to the medical service. This additional experience could be coordinated with a clinical research study which might have been initiated during another elective experience. The clinical training programs in the University of Maryland and Veterans Administration hospitals are comparable and integrated, with interchange of medical residents, participation by the Department of Medicine attending physicians, joint conferences and shared research efforts.

*Clinical Medicine Elective, Mercy Hospital*—The senior student functions as an intern under the direction of the fulltime teaching staff, private attending staff and medical resident staff. The students' duties consist of patient evaluation by history and physical examination, differential diagnosis and plan of management. He will be given primary responsibility for patient evaluation and management, insofar as he is able to assume it under direct supervision. This will include writing orders, scheduling and performing diagnostic procedures as a member of the medical housestaff team. His daily routine will contain participation in teaching conferences and medical grand rounds as well as literature review of his patients' problems.

*Clinical Clerkship in Medicine Elective, Maryland General Hospital*—This program is designed to give seniors needed clinical experience in medicine. Students will have supervised patient responsibility on the medical services of the hospital with emphasis on diagnosis and complete patient care. A wide variety of clinical material is available. The student will be expected to participate in the active inservice educational program of the hospital.

*General Internal Medicine Elective, York (Pa.) Hospital*—An opportunity is presented for private and/or service patient responsibility and assignment to a selected group of patients with intensive bedside teaching conducted by certified specialists and residents and a coordinated program offering general medical and subspecialty conferences weekly.

*Senior Clinical Clerkship in Medicine Elective, Provident Hospital*—This program is designed to give the student clinical experience in the care of general medical patients in a community hospital setting. Students will be assigned to the general medical wards and will function as interns insofar as possible, being responsible for the initial problem-oriented medical history and physical

examination, daily rounds, orders and care for assigned patients. The students will be assigned to specific members of the Department of Medicine for supervision and consultation and will participate in all of the teaching activities of the hospital. For those students interested in subspecialty emphasis such as cardiology, community health care of alcoholism, gastroenterology or pulmonary disease, special programs can be arranged with various divisions of the service. Provident has an associated Comprehensive Neighborhood Health Care Center, an alcoholic detoxification and drug abuse program and an associated Quarterway House so that clinical experience in the physical and psychological problems of the acute and chronic alcoholic may be arranged.

*Advanced Training in Clinical Medicine Elective, Baltimore Veterans Administration Hospital*—The student will be assigned to a general medical ward where he will function as an intern responsible to both his patients and the medical resident as part of the entire ward team. He will be taught to demonstrate logic, thoroughness and consistency in terms of: (1) acquisition of data base; (2) comprehension and understanding of patients' problems; (3) development of medically sound, patient-oriented, diagnostic, therapeutic and educational plans; (4) carrying out such plans, including indicated diagnostic procedures, and (5) outpatient followup of former inpatients in medical clinic.

## DIVISION OF ARTHRITIS

### UNDERGRADUATE MEDICAL PROGRAM

#### Third Year

*ARTH 530—Division Rounds*—This is an elective course for junior medical students.







#### *Fourth Year*

**ARTH 541—Rheumatology Elective, Baltimore Veterans Administration Hospital**—The course is set up to provide sufficient basic clinical, radiologic and laboratory background in the field of rheumatic diseases. The student will be exposed to current clinical problems by the way of consultations and outpatient clinics at Baltimore Veterans Administration and University of Maryland hospitals. Various aspects of treatment including drug therapy, physical medicine and rehabilitation as well as orthopedic surgery will be presented and discussed. The student will also be exposed to various diagnostic procedures such as joint tap, clinical analysis of joint fluid and other diagnostic procedures currently available in the arthritis laboratory such as polarized light microscopy, fluorescent antibody technique and various immunological and biochemical tools that are applied for clinical and research purposes. Rheumatology conferences are scheduled at VA, University of Maryland and Johns Hopkins hospitals.

### **DIVISION OF CARDIOLOGY**

#### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Fourth Year*

**CARD 541—Clinical Cardiology Elective**—This course will afford the opportunity for students to participate in patient evaluation and examination. There will be opportunities to consult on patients with these reviewed by fellows in cardiology and faculty members. Frequent conferences

are held weekly and there will be adequate opportunities for reading and interpreting electrocardiograms. Emphasis will be placed on the physical examination, evaluation of clinical data and related laboratory data. The students upon completion of this experience should be more adequately rounded in clinical cardiology. The experience will include rotation through the adult and pediatric ambulatory areas.

**Electrocardiography - Clinical Cardiology Elective, Mercy Hospital**—The primary goal is to develop facility in the use and interpretation of





electrocardiograms with arrhythmias receiving particular attention. The coronary care unit and intensive care unit as well as the routine daily electrocardiograms are the main material source. An electrocardiogram slide library is also available for review and study. The elective also includes: (1) other audiovisual aids of selective topics in cardiology such as tapes and slides; (2) rounds in the coronary care unit and intensive care unit; (3) attendance at cardiology conferences and seminars; (4) attendance at cardiac clinic and pacemaker clinic, and (5) submission of a short paper with bibliography reviewing recent concepts of a topic in cardiology.

*Clinical Clerkship in Cardiology Elective, Maryland General Hospital*—This is an informal clinical program including EKG and other graphic methods of interpretation and correlation of clinical material with physiologic data including cardiac catheterization. Students participate in cardiology walking rounds, inpatient care and clinics, regular cardiology conferences and the journal club. The purpose of the elective is to increase sophistication in auscultation, clinical judgment, utilization of graphic and physiologic methods in diagnosis and management of cardiovascular diseases.

*Cardiology Elective, York (Pa.) Hospital*—Students have supervised responsibility for patients being cared for in a coronary care unit and they also participate in specialized cardiac diagnostic procedures including coronary arteriography, cardiac catheterization, electrocardiography and phonocardiography. Emphasis is on clinical cardiology in a hospital setting.

*Clinical Cardiology Elective, Baltimore Veterans Administration Hospital*—Daily EKG reading, ward consultations, cardiology clinic, lectures on selected topics in cardiology and case presentations to visiting consultants are given in this elective. Teaching sessions are conducted both individually and jointly by the faculty members. Each student is asked to read in depth and give an oral presentation on a selected topic in cardiology. A tape collection is available for self teaching. Baltimore VA represents a fine opportunity for the student in learning cardiology at the bedside. Currently the medical service consists of 160 beds of which 120 represent acute problems, many of which are cardiac. Patients are quite receptive to interviews and physical examinations by students. An eight-week rotation is encouraged for those students who have a special interest in internal medicine. The longer rotation will allow assimilation of more clinical material and will permit an intensive exposure to all of the modern non-invasive diagnostic techniques in cardiology.

## FELLOWSHIPS

These are available to selected postgraduate applicants. The fellow participates in the activi-

ties of the division including cardiac catheterization, electrocardiography, phonocardiography and vectorcardiography. Research fellowships are also available. The fellowship begins July 1st of each year and a financial stipend is provided. Application is made through the head of the division and must be completed by October of the preceding year.

## DIVISION OF DERMATOLOGY

### UNDERGRADUATE MEDICAL PROGRAM

#### Third Year

DERM 530—*Introduction to Dermatology*—Students are given assigned reading on the more common skin eruptions. Nine two hour clinical sessions are held for each quarter of the junior class. Individual instruction is given by one of the senior staff members emphasizing the pertinent aspects of differential diagnosis.

#### Fourth Year

DERM 541—*Dermatology Elective*—Emphasis will be made on the method of diagnosis and treatment of conditions in which skin eruptions play a major role. Constant reference will be made to the relationship of cutaneous lesions of systemic disease. The student who elects dermatology will participate in the seminars held for residents each day. Opportunity will also be afforded to study laboratory procedures used in this specialty and he will be given the opportunity to observe the current research.

## GRADUATE STUDIES

The division is approved by the American Board of Dermatology for the three years of training which is required by the board for certification. This consists of instruction in the basic sciences (mycology, bacteriology, histopathology, chemistry and physiology) and course instruction in clinical dermatology. Emphasis is placed on the relationship of cutaneous lesions to systemic diseases. Residents and fellows spend a part of the training period at the Rosewood State Hospital for Retarded Children, Veteran's Administration Hospital, Mercy Hospital and in private offices of the members of the staff. Temporary membership in the dermatologic societies is provided under the sponsorship of the division head.

## DIVISION OF ENDOCRINOLOGY AND METABOLISM

### UNDERGRADUATE MEDICAL PROGRAM

#### Fourth Year

ENDO 541—*Clinical Endocrinology and Metabolism Elective*—The course is designed to provide

seniors with a broad clinical experience in endocrinology and metabolism. This is accomplished through a four-week concentrated period of training devoted mainly to a study of patients with clinical disorders of endocrine function. The physiologic and biochemical basis for the diagnosis and management of these disorders are given special emphasis. Students are assigned to work directly with both hospitalized patients as well as those in the outpatient diabetic and endocrine clinics. Students assist with the day to day management of these patients under the supervision of a staff member. Participation in daily ward rounds and weekly conferences and seminars conducted by senior staff members of the division will assist in offering the student an optimal clinical experience. Students are also encouraged to explore these clinical problems in depth through guided reading, library research projects and direct participation in some ongoing clinical research studies within the division.

*Endocrinology Elective, York (Pa.) Hospital*—There is involvement in the consultative and primary management of inpatient and outpatient endocrine patients. Part of the course will require a project involving original work and literature review on selected topics. Students will participate in endocrine conferences and similar seminars at University of Maryland Hospital as well as in the endocrine evaluation done in the Department of Nuclear Medicine.

*Endocrinology Elective, Baltimore Veterans Administration Hospital*—This elective provides an opportunity to study not only primary endocrine diseases, but a wealth of metabolic complications of other disease states in a busy medical service of 160 beds. Considerable attention will be given therefore to disorders of water and

electrolyte metabolism, pH and renal function and a special interest will be directed to the metabolic problems of neoplasia. Supervised students will be expected not only to take consultations in the clinic and ward but seek them by noting abnormal laboratory data suggesting metabolic disturbances. A good grounding in more complicated endocrine investigative techniques will be available and teaching emphasis placed on basic physiology and pathophysiology. There will be daily teaching rounds and weekly conferences at University of Maryland and Johns Hopkins hospitals.

## FELLOWSHIPS

**SUMMER FELLOWSHIPS**—These are offered for 12 weeks to any qualified medical student and may be designed with major emphasis on clinical or basic research experience depending on the interest and capabilities of the student.

**POSTDOCTORAL FELLOWSHIPS**—Fulltime positions are available to selected postdoctoral candidates who have usually completed two or more years of house officer training. Fellows participate in on-going research projects and independent investigations are encouraged. These trainees also participate in all clinical activities within the division. A financial stipend is provided. Applications may be made through the division.

## DIVISION OF GASTROENTEROLOGY

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

The division participates in a concentrated two week course in applied basic science to gastrointestinal disorders in the sophomore year. GI conferences are presented once a week followed by walking floor rounds. The outpatient clinic meets once a week, an endoscopic clinic is held three mornings a week and a proctoscopic clinic is also held once a week.

#### *Fourth Year*

**GAST 541—Clinical Experience in Gastroenterology Elective**—Interested students are invited to "live" with the fulltime members of the Division of Gastroenterology. Students are welcome to share in all aspects of this subspecialty, in history and physical examinations, diagnostic procedures, x-ray interpretations and therapeutic efforts for both ward and private services. An active participation by the student is anticipated in clinical seminars, both at the University of Maryland and Baltimore Veterans Administration hospitals as well as attendance at the gastrointestinal clinic in the Outpatient Department.





## FELLOWSHIPS

Senior students wishing to take an elective month of gastroenterology are welcome. Experience in exfoliative cytology, gastric analysis and duodenal drainage and other vital laboratory procedures is available to those who wish to learn laboratory techniques. Those interested in a summer student fellowship or a two-year postgraduate fellowship should apply to the head of the division.

## DIVISION OF HEMATOLOGY

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

Members of the division are responsible for the first semester part (hematology) of the sophomore course in clinical pathology. Clinical and laboratory aspects of blood dyscrasias are covered with an introduction to blood group immunology.

#### *Fourth Year*

**HEMA 541—Clinical Clerkship in Hematology Elective**—As a clinical clerk, the student will participate in all clinical activities of the Division of Hematology and will be considered as an integral



part of its staff. Working directly with the hematology medical resident and/or fellow, he will see and follow all service and private patients of interest to the division. He will be expected to participate in the weekly hematology clinic. It is anticipated that in this role he will encounter clinical problems related to internal medicine in a broad sense as well as to hematology per se. He will have the opportunity to familiarize himself with the laboratory aspects of hematology including the performance and interpretation of bone marrow examinations.

**Hematology Elective, York (Pa.) Hospital**—Inpatient as well as outpatient consultations will be seen and appropriate diagnostic hematology procedures will be reviewed. The student will have the opportunity to observe these procedures in the laboratory and he will learn to perform and interpret bone marrow aspirations. Current therapeutic measures pertaining to leukemias, lymphomas, bleeding disorders and anemias will be reviewed. The concepts of cellular and antibody mediated immune reactions and their clinical relevance will be discussed.

## FELLOWSHIPS

At least one fulltime fellowship in hematology is available to applicants with a minimum of one year internship. A stipend is provided. Two summer fellowships are offered to medical students interested in either clinical experience or research projects.

## DIVISION OF INFECTIOUS DISEASES

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**INFE 541—Training in Infectious Diseases Elective**—The diagnosis of infections and the proper management of patients with these diseases are taught by exposure of the student to practical,





clinical, laboratory and research problems. The clerkship will include teaching rounds both formal and informal, consultative rounds, research conferences, control of hospital infections, labo-

ratory diagnosis, clinical research and laboratory research. In addition, each will be expected to present an informal seminar on a topic of current interest. Emphasis of the course is to provide a learning experience in the synthesis of previously acquired basic science and clinical knowledge to the rational solution of patient and community infectious disease problems.

*Infectious Diseases Elective, York (Pa.) Hospital*—There is active participation in both private and ward consultations as well as full patient responsibility in later service areas if so desired. The course presents an introduction to a hospital microbiology laboratory; thorough study of all specimens pertaining to consultations; involvement in bacteriological principles and practice dependent upon student's interest. The minimum requirement is to become proficient in technique, interpretation and application of gram stains from clinical specimens. Active participation in and partial responsibility for infectious disease conferences and, at times, general medical conferences is expected of the student.

*Infectious Diseases Elective, Baltimore Veterans Administration Hospital*—This elective will provide the student with a background in the problems unique to the diagnosis and treatment of infectious illnesses. The student will see consultations submitted to the service under the supervision of a fulltime teaching fellow. Teaching rounds are made daily with a staff member. There will be ample time to spend in the diagnostic bacteriology laboratory in order to reacquaint the student with medical microbiology. Weekly research conferences and weekly infectious disease conferences are held in conjunction with the infectious diseases service at the University of Maryland. The student will be expected to attend these conferences. A topic of current interest in the field will be assigned to each student for literature review and presentation at the termination of the rotation period. The importance of the laboratory and the basic sciences in the solution of clinical problems will be emphasized.

## FELLOWSHIPS

**STUDENT FELLOWSHIPS**—The division offers six to eight fellowships for support and supervision of students throughout their medical school career. These fellowships provide special instruction and experience in infectious diseases. Application is made through the division head.

**POSTGRADUATE FELLOWSHIPS**—The division sponsors four to six fellows who receive instruction in laboratory techniques and clinical investigation. Fellows participate in all functions of the division, including collaboration in investigative problems. A financial stipend is provided. Application is made through the division head.



## DIVISION OF INTRODUCTION TO MEDICINE (PHYSICAL DIAGNOSIS)

### UNDERGRADUATE MEDICAL PROGRAM

#### Second Year

**PDIA 520—Introduction to Clinical Medicine**—Early in the year the entire class receives instruction in the techniques of elaborating the clinical history and in performing the physical examination. Small tutorial groups are formed under the direction of an instructor. During the first five weeks experience in examination of normal individuals is given one afternoon weekly. An integrated lecture series is given by various members of the clinical faculty. During the remainder of the year, students become acquainted with abnormal signs through examination of hospitalized patients. This practical instruction includes children and patients with neurologic ophthalmologic and chronic diseases with instruction provided by members of the departments of pediatrics, neurology, ophthalmology and rehabilitation medicine. Members of the Division of Cardiology provide instruction in physical examination of the cardiovascular system.

## DIVISION OF NEPHROLOGY

### UNDERGRADUATE MEDICAL PROGRAM

#### Fourth Year

**NEPH 541—Nephrology Fellowship Elective, Maryland General Hospital**—The Division of Nephrology is organized as a diagnostic unit for renal disease with facilities for treatment of acute and chronic renal failure. A program for training patients in chronic home hemodialysis is available. This elective exposes students to the practice of clinical nephrology and to the management of acute and chronic renal failure. Participants in this program become familiar with the diagnostic approach to renal disease, renal function testing, the urinary sediment and the treatment of renal diseases. A review of renal physiology is also included. A series of selected renal biopsies is available for study and review. Experience is gained in the treatment of terminal renal failure including peritoneal dialysis, hemodialysis and transplantation. Individual literature research is encouraged but not required.

### FELLOWSHIPS

**SUMMER FELLOWSHIPS**—Summer fellowships will be open to selected students who wish to pursue special problems in clinical or investigative nephrology. Application should be made to the division head.

**POSTGRADUATE FELLOWSHIPS**—Qualified physicians may apply for fulltime fellowships in nephrology. Although one year fellowships of primarily clinical training are offered, preference will be given to those desiring two years of training. The first year fellowship is primarily clinical, unless a specific research project is planned beforehand. A first year fellow will achieve proficiency at handling renal and electrolyte problems, peritoneal and hemodialysis, renal biopsy, and the care of transplant patients. The fellow will be responsible for participation in teaching for preclinical and clinical medical students and housestaff. During the first year, the fellow will be encouraged to select a specific project on which to spend much of his time in the second year.

## DIVISION OF NUCLEAR MEDICINE

### UNDERGRADUATE MEDICAL PROGRAM

#### Fourth Year

**NMED 541—Nuclear Medicine Elective, York (Pa.) Hospital**—Basic instruction in radioisotope technique and applications to both diagnosis and therapy are presented which includes active participation in clinical evaluation of patients seen in a busy nuclear medicine department. There is also a project involving original work or review. Among the areas of study are those using scintillation camera techniques, rectilinear scanning, iron metabolism, organ identification and scanning, cerebral blood flow, renal blood flow and ultrasound "B" Mode scanning.





## FELLOWSHIPS

**POSTGRADUATE FELLOWSHIPS** — Postgraduate fellowships in nuclear medicine will be offered to selected applicants. Applicants must have completed internship and a minimum of one year of residency either in medicine, radiology or pathology. The fellowship will be for not less than two years. The program consists of the basic sciences and clinical training necessary for fellows wishing to make a career in nuclear medicine. During the fellowship, training candidates will be expected to pursue areas of independent research.

## DIVISION OF PULMONARY DISEASES

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

Members of the division take part in the teaching of the physiology course with emphasis on the clinical application to basic respiratory physiology. This includes an introduction to clinical medicine.

#### *Second Year*

During the subject systems portion of the second semester a period of two weeks is devoted to the respiratory system. The teaching of clinical medicine is integrated with epidemiology, pharmacology, microbiology and closely correlated with the teaching of physiology and pathology. This does not attempt to provide a course in respiratory diseases but the most common and most important groups of diseases are included.

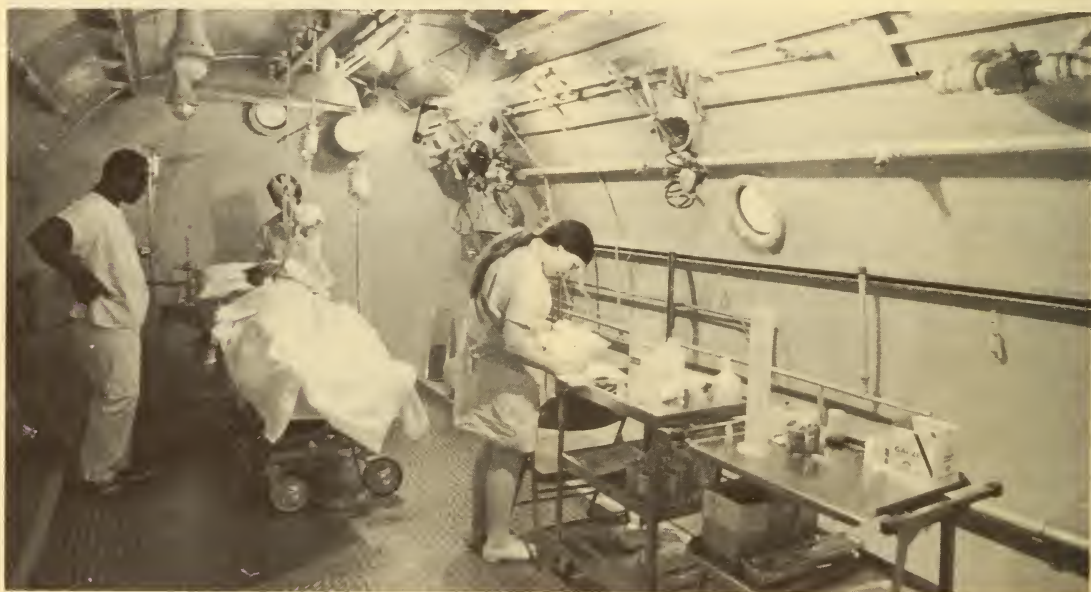
#### *Third Year*

A medical respiratory disease unit which provides for the admission of patients with pulmonary tuberculosis and other respiratory diseases is available for the teaching of students during their clinical clerkship. Students are supervised and taught by residents, fellows and faculty within the division and attending physicians in the department. During their rotation to the unit, students attend the chest clinic one afternoon each week where they are exposed to patients with a variety of respiratory diseases including tuberculosis.

#### *Fourth Year*

**PULM 541—Pulmonary Diseases Elective**—Experience is given in the areas of clinical medicine and applied physiology with emphasis on correlation of clinical, roentgenographic and physiological findings. The clinical material for teaching will be from the wards of University of Maryland Hospital, the Baltimore VA Hospital, the hospital physiology laboratory and the Western District Chest Clinic. A standard proportion of the time will be allocated at University of Maryland Hospital and Outpatient Department, but allowance would be made for emphasis in any one area depending on the interest and requirements of the individual. This allows experience in the differential diagnosis and management of the most important pulmonary diseases including tuberculosis in the hospitals and in the ambulatory care setting.

**Intensive Respiratory Care Elective, Maryland General Hospital**—The student will be given the opportunity to actively participate in the care of patients who are in need of intensive respiratory care. Experience will be provided in most or all





of the following areas: the interpretation and clinical correlation of physiologic data, controlled flow oxygen therapy, intubation techniques, management of the respirator-dependent patient, pre and postoperative evaluation and management of patients with chronic lung disease. The program will be flexible to meet the specific needs of the student.

*Pulmonary Disease Elective, York (Pa.) Hospital*—Students will participate in consultative patient care of persons suffering a wide variety of pulmonary diseases including participation in the performance, measurement and interpretation of pulmonary function testing, blood gas analysis, together with experience in inhalation therapy procedures performed on both inpatients and outpatients as well as continuous ventilation services.

## FELLOWSHIPS

**SUMMER FELLOWSHIP**—This program provides an opportunity for intensive instruction in the subspecialty. Six to eight students are awarded fellowships each summer. The course is con-

ducted over a period of ten weeks and each student is expected to be present during eight weeks at least. One or two students are accepted from the freshman class, two or three from the junior class and the remainder from the sophomore class.

The principal objective of the program is the correlation of structure and function. The clinical aspects of respiratory diseases are related to the roentgenographic, physiologic and pathologic findings. Patients are available at University of Maryland Hospital, the Baltimore Veterans Administration Hospital, at other affiliated hospitals and at Western District Chest Clinic. Methods of measurement of physiologic function are taught and students have an opportunity to take part in the performance of routine testing. The instructors are faculty members and postdoctoral fellows within the division, members of the staff of affiliated hospitals and guests.

The program is clinically oriented. Research is not mandatory but is encouraged. A library project is required. A report of each project is presented to the entire group and a monograph with appropriate bibliography is submitted.

## MICROBIOLOGY

Training in microbiology within the medical school curriculum is primarily during the sophomore year when all students are required to take medical microbiology and immunology. In addition, a substantial number of seniors take clinical immunology during the elective portion of their training. Individual staff members provide instruction and guidance throughout the entire medical curricula.

The department also offers a MS and a PhD. While the MS may be offered in special instances, priority for research

facilities will be given to PhD aspirants. This department encourages students who wish to enroll in the MD-PhD program.

Emphasis is placed upon medical aspects of microbiology. Research programs are available in virology, rickettsiology, medical bacteriology, immunology and microbial physiology. Opportunities are open for experience in teaching and in diagnostic bacteriology and serology. Opportunities also exist for ecological studies on rickettsioses and arboviruses in overseas areas.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

**MMIC 520—Medical Microbiology and Immunology (8)**—First semester. Four lecture hours and eight hours in laboratory and group conferences per week. This course begins with an introduction to basic principles of microbiology and immunology and then proceeds to consider the major groups of bacteria, spirochetes, fungi, rickettsiae, viruses and parasites that cause human disease. Emphasis is placed upon an analysis of the properties of microorganisms thought to be important in disease production,

pathogenesis of infection and interaction with host mechanisms, epidemiology and control measures.

### *Fourth Year*

**MMIC 541—Clinical Immunology (2)**—Second semester. This course considers the role of immune responses in both the pathogenesis and management of human disease. It consists of three parts: 1) a brief review of the principles of immunobiology, 2) a brief review of the principles of immunopathology, and 3) a comprehensive consideration of the generalized disorders of immunity, of allergy to exogenous

antigens, and of autoimmunity. Prerequisite MMIC 601 or MMIC 602, or equivalent.

**MMIC 548—*Research in Microbiology Elective***—This course is designed to introduce the student with interest in research to the programs and opportunities available through the Department of Microbiology. It is a flexible program designed as an intensive period of contact with the activities of the department. The basic occupation of the student will be participation in a research

project under the close supervision of a staff member. While most of the department's research is carried out on the Baltimore City campus opportunities for participation in field work may occur from time to time. Students will be expected to participate in all departmental functions including staff seminars, graduate student seminars and visiting lectureships. Because of limitations of space, students should consult staff members individually before electing this program.

## NEUROLOGY

Neurology is broadly, but properly, interpreted as the study of the nervous system including central, peripheral and neuromuscular systems. It includes basic and clinical aspects of the human nervous system, both normal and diseased. Accordingly, department members participate in planning and delivering course material in all four years of undergraduate medical education. While it is recognized that only a relatively small number of medical students will choose careers in medical or surgical neurology or in the basic neurosciences, it is believed that all medical graduates must have sufficient understanding of the basic structure and function of the nervous system to perform a satisfactory neurological examination, recognize and treat the many common neurological disorders and know when to refer the patient to a neurological specialist. Of

special importance is the ability to distinguish between functional and organic neurological symptoms or signs.

While the organization of the postgraduate program of the department, as well as the interests and the abilities of the fulltime faculty, are especially suited to the training of academicians and investigators, the department recognizes its responsibility also to train neurologists who will practice their specialty in this community and state.

The discipline of neurology has maintained its traditional ties with basic science and by its complex but logical nature has typified the scholarly aspects of medicine. Recent methodological and scientific advances have created a new and therapeutically-oriented specialty which is represented in the philosophy and goals of this department.

## UNDERGRADUATE MEDICAL PROGRAM

### *First and Second Year*

**NEUR 510—*Neurological Sciences I***—Lecture demonstrations of clinical cases constitute an integral part of this course. There is emphasis on correlation of anatomy and physiology with clinical material. Neurologic aspects of physical diagnosis are taught in both the first year and second year of medical school with instruction in performance of the normal neurologic examination as well as examination of selected patients with neurologic disorders.

**NEUR 520—*Neurological Sciences II***—In conjunction with the Department of Pathology, and with contributions from other clinical and basic science departments, there is a correlative

course given in the second year of medical school in which pathology of the nervous system is correlated with clinical disease.

### *Third Year*

**NEUR 530—*Clinical Clerkship***—In the third year, members of the class may take a clerkship on the neurology ward at University of Maryland Hospital or the hospital's private service for a period of three weeks. Under housestaff and attending staff supervision, the students are responsible for the care of patients with neurologic disease. They may assist in the performance of some procedures and attend rounds and conferences in neurology. A didactic series of 12 lecture-demonstrations is given to these students as well as those who are serving a clerkship in the Department of Psychiatry.



#### Fourth Year

**NEUR 541—Clinical Elective**—The student will be able to have a variety of clinical experiences on the neurologic service. The neurologic examination of the patient is emphasized. The study and application of a wide variety of specialized neurologic diagnostic techniques is included. Students will be given individual patient responsibility. The assignments will be at University of Maryland and Montebello State hospitals. Each student will become proficient in the taking of a neurologic history, the performance of the neurologic exam, the formulation of a reasonable diagnostic impression or differential diagnosis, a plan of investigation and management for several of the more common neurologic problems.

**Neurology Elective, York (Pa.) Hospital**—There is primary patient responsibility in inpatient neurology and participation in neurologic consultation on both in and outpatients. Participation in a wide variety of specialized neurologic diagnostic techniques including air studies, bi-plane angiography, radioisotope, brain scans and blood flow studies.

**NEUR 548—Neurological Research Elective**—The student will have the opportunity to work with individual members of the department in the following areas: (1) cerebrovascular physiology; (2) neuromuscular research; (3) neurophysiology; (4) electron microscopy, and (5)

neurochemistry. The student will learn the principles and methods of investigating a problem. He will be involved with ongoing research and in some instances, especially with the longer electives, publication of results will be possible.

#### GRADUATE STUDIES

There is a fully approved three-year program in special training in neurology at University of Maryland Hospital. This provides for clinical training as well as rotation through the associated basic science disciplines. Fellowships with a stipend are provided and begin July 1 each year. Formal didactic sessions in neuroanatomy, neuropathology, neurochemistry, neurophysiology, neuroophthalmology, electroencephalography and nerve and muscle diseases are organized on a regular basis for the fellows and house officers. There are also a regular series of weekly conferences and formal and informal rounds. For further information contact the department chairman.

#### FELLOWSHIPS

Students who have completed their first, second or third years and have an interest in neurologic sciences may apply for additional training in clinical neurology or in one of the research laboratories of the department. Qualified students may receive remuneration as fellows for the ten week fellowships taken during vacation periods.

## OBSTETRICS AND GYNECOLOGY

The goals of the Department of Obstetrics and Gynecology are to be found in the general areas of education, research and service.

The educational goal is to provide learning experience that encourages each student, regardless of ultimate career choice to develop professional attitudes, diagnostic skills and knowledge relevant to the human female and to her sexual reproductive system. And, in doing so to assume more effective responsibility for the general delivery of health care to the adolescent, adult and aging female and to the newborn.

The student is taught to recognize more accurately those patients who require special gynecologic consultation. And, he gains insight into such health

related social problems as family planning and other aspects of population control, sexual difficulties, sterilization, induced abortion and unwed pregnancies.

This educational material is presented in such a way as to familiarize students with all sources of knowledge relevant to these subject areas so that each may extend his knowledge and skills in a direction and depth appropriate to his current and ultimate career goals. The student's attention is also directed to areas in which available knowledge is deficient with the attempt to stimulate him to take advantage of elective opportunities in basic, clinical and social research.

The service roles are to be found in

the general areas of obstetrical and gynecologic care. Obstetrical service basically deals with the high risk pregnancy population and provides excellent educational opportunities for both student and resident. Specialty clinics in endocrinology, complicated pregnancy, cancer, preoperative and postoperative evaluation and family planning provides specific, specialized areas of instruction in addition to providing service to large numbers of patients.

Cancer detection and therapy is a major part of the gynecologic program.

Research activities are diverse and

among the projects under way are those concerned with amniotic fluid analysis, sterilization techniques, epidermal growth factors during pregnancy and the effects of hypertensive disease on pregnancy.

The department is heavily committed to the use of audiovisual presentations for the enhancement of the educational experience of both medical student and resident. The faculty also contributes to the postgraduate educational program both at University of Maryland Hospital and throughout the state.

## UNDERGRADUATE MEDICAL PROGRAM

### *Third Year*

**OBST 530—Clinical Clerkship**—Students are assigned to obstetrics and gynecology for a period of six weeks. As clinical clerks they participate in the original diagnostic studies, pelvic surgical procedures and postoperative care of hospitalized patients. Instruction in prenatal and gynecologic outpatient care is accomplished in the Outpatient Department. Seminars and departmental conferences with the attending staff and house officers are employed for teaching the art of correlating observations, diagnosis and therapy. Frequent and close contact with faculty staff is achieved by means of a preceptorial system which assigns a group of two or three students to a member of the faculty for the entire clerkship. As an alternative to the clerkship at the University of Maryland Hospital, similar instructional programs are offered to a limited number of students by the obstetrics and gynecology departments at Mercy and Baltimore City hospitals.

### *Fourth Year*

**OBST 541—Obstetrics and Gynecology Elective**—The student may elect to rotate through a variety of areas within the department or he may spend his time more intensively in a specific area such as oncology, delivery, reproductive laboratory, Outpatient Department or any other reasonably profitable activity approved by the department. The course allows the student to become more familiar with aspects within the field of obstetrics and gynecology and reproduction in order to evaluate his interest and make career choice decisions. It provides practical experience for those who feel they may find confidence in basic clinical obstetrics and gynecology a desirable part of their background.

**Maryland General Hospital Elective**—The goals of this course are: (1) to offer sufficient

ob-gyn practical experience to allow a student to make an intelligent decision regarding possible specialization; (2) to offer sufficient experience to establish a basic competency for normal deliveries and pelvic examinations, and (3) to offer practical experience in the care of ambulatory patients through evaluations and observations made in hospital clinics. The student will assist various preceptors in the operating and delivery rooms and in patient evaluation in the clinics.

**York (Pa.) Hospital Elective**—This course provides an opportunity for broad, practical clinical experience in a 550-bed community hospital. There is a supervised experience involving care of ambulatory and hospitalized patients both service and private. The obstetrical opportunities include management in the Outpatient Department during labor and delivery and in the postpartum period. The gynecological opportunities involve the care of outpatients as well as the evaluation of inpatients preoperatively, assisting in their surgery and postoperative care. The preceptorship includes office and hospital experience with practicing obstetrician-gynecologists.

**Baltimore City Hospitals Elective**—The structure of this elective will be consistent with an individual student's requirements. A definitive structure does not seem desirable but should be determined by what the student's needs are within his own program. This structure could be limited to obstetrics and gynecology and with several subdisciplines within it or it could be correlated with neonatology.

**Provident Hospital Elective**—The elective is flexible with ample opportunities for the student to spend time where he chooses (e.g. delivery room, obstetrical clinic and gynecological clinic). Under supervision of the fulltime chief, attending physicians and housestaff, the student's duties will include: (1) case workup including history, physical examination and progress notes; (2) attend clinics, conferences and rounds; (3)



follow progress of obstetric cases in labor and record; (4) notify resident of any complications; (5) deliver uncomplicated cases under supervision as well as observe or scrub in on compli-

cated deliveries; (6) follow postpartum course; (7) assist on gynecologic surgery, and (8) perform ward duties including starting IV solutions and changing dressings.

## OPHTHALMOLOGY

The Department of Ophthalmology participates in the physical diagnosis courses given in the first and second years. The emphasis is on developing techniques (ophthalmoscopy and tonometry) needed for a complete ocular examination. Self-instruction techniques are employed, permitting students to advance as rapidly as each individual can in developing appropriate examination techniques. Students are encouraged to ask for consultation regarding patients with ocular changes seen on other services.

A two-week course in clinical ophthalmology is given during the clinical clerkship. All aspects of clinical ophthalmology are covered in seminar-type discussions, plus self-instructional

material. Practical experience in performing complete ocular examination and evaluating ocular complaints is given in a supervised clinic setting. Emphasis is on ocular problems seen by family physicians with guidelines for treatment and referral.

Students interested in a more complete experience may elect a clerkship in ophthalmology. Time is divided between the outpatient and ward services, plus the conference for residents.

Physicians are encouraged to refer patients with ocular problems for examination by students, attending and staff physicians during grand rounds. Discussion of differential diagnoses and possible methods of therapy follow.

## UNDERGRADUATE MEDICAL PROGRAM

### *Fourth Year*

OPHT 540—*Introduction to Ophthalmology*—A combined seminar and outpatient course over a two week period to cover fundamentals of clinical ophthalmology. The basic aspects of ophthalmology are covered with a programmed textbook and seminars in the morning and clinical experience in ocular examination in the Outpatient Department in the afternoon.

OPHT 541—*Clinical Ophthalmology Elective*—Students spend time in the outpatient area and on the wards improving their skills in examining patients with ophthalmological problems. Time is available for observation of ocular surgery and to find out what the practice of ophthalmology includes. Students are expected to attend all regularly scheduled conferences and seminars.

*Clinical Ophthalmology Elective, Maryland Gen-*

*eral Hospital*—Externship in ophthalmology. The afternoons are spent improving skills in examination of patients with ocular problems in the outpatient area. Conferences and seminars are regularly scheduled to cover various aspects of ophthalmology. Sufficient time is available to observe ocular surgery.

## GRADUATE AND POST-GRADUATE MEDICAL PROGRAM

The clinical residency training, a three year program, is conducted at University of Maryland, Mercy and Provident hospitals. Didactic and clinical instruction is included. Residents attend the Lancaster Basic Science Course in Ophthalmology at Colby College, Waterville, Ma. at the end of the first year of residency training. Appointment is by application to the Department of Ophthalmology, University of Maryland Hospital.

## PATHOLOGY

The Department of Pathology has as its primary goal instruction for the understanding of human disease with empha-

sis on mechanisms of disease and changes occurring at the subcellular level and in molecular terms.

The goal of education in pathology has three phases: (1) to permit students to acquire the basic principles of pathology and to apply those principles to the diagnosis and study of health care delivery as expressed in diagnostic areas such as surgical pathology, clinical pathology, cytology, forensic pathology and autopsy pathology; (2) to establish a philosophy of critical evaluation and judgment concerning the problems of health and disease in humans, and (3) to develop feelings of personal responsibility and ethics for the practice of medicine.

The philosophy of the department is that the study of disease includes both structure and function and is carried out from the level of the patient to the molecule.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

**PATH 501—General, Systemic and Experimental Pathology**—This course starts with the study of the basic principles of pathology and progresses with the study of diseases of the various organ systems. In the second semester, instruction in diseases of the organ systems is correlated with other departmental offerings and "Introduction to Mechanisms of Disease" through the subject systems committees. Teaching is chiefly by the case method using fresh and fixed autopsy cases but utilizes gross museum specimens and a set of prepared selected histologic slides. Students assist in the performance of autopsies in small groups, prepare final protocols and present the findings and interpretation of the cases to others in the class. In addition, a block of time devoted to basic forensic pathology is incorporated in the second year course. Included in the course is an introduction to experimental pathology by two experiments illustrative of basic pathologic principles.

**CPAT 502—Clinical Pathology**—The course is designed to train the student in the performance and interpretation of the fundamental laboratory procedures used in clinical diagnosis. During the first semester the basic techniques of hematology as well as clinical aspects of blood diseases are taught.

**CPAT 503—Clinical Pathology**—In the second semester, the performance and interpretation of tests used in the diagnosis of renal, hepatic, gastric, pancreatic and metabolic diseases are considered. A review with clinical applications of acid-base balance and electrolyte disturbances is

The department includes the following segments:

### I. Hospital Pathology Services

- A. Anatomic: surgical pathology, cytology, neuropathology, forensic pathology, morphology laboratories
- B. Clinical: hematology, clinical chemistry, microbiology, blood banking, clinical immunology
- C. Baltimore's Veterans' Administration Hospital

### II. Education Program: medical student, graduate and postdoctoral, undergraduate and resident

### III. Research: cell injury, cancer immunology, kidney structure and function, chemical carcinogenesis, cell immunology, red cell metabolism and chemical test methodology

included. Methods of examination of cerebrospinal fluid, transudates and exudates are taught. Elements of clinical parasitology complete the work in this semester. Each student provides his own microscope and blood counting equipment. A completely equipped locker is provided for each student.

### *Fourth Year*

**PATH 541—Advanced General Pathology Elective**—This is an intensive experience in the principles of human pathology as studied at autopsy and by chemical examination on serum and tissues. Students are expected to operate independently but with close tutorial supervision and to present material at weekly seminars. The course is designed for predoctoral graduate students.

**Clinical Clerkship in Anatomic Pathology Elective**—The purpose of this brief exposure to pathology at Maryland General is to give the senior student an introduction to anatomic pathology as practiced in a community hospital. Direct participation and exposure will be in the field of anatomic pathology during which the student will perform a few autopsies (under supervision) and write them up including gross and microscopic descriptions and correlation. He will participate in other departmental activities including exposure to interesting surgical pathology specimens and selected aspects of clinical pathology.

**General Pathology Elective, Provident Hospital**—The program is engineered to acquaint the senior student with general pathology in the community hospital setting. The student will work with and assist the pathologists in the performance of autopsies and study of autopsy



material, the examination and interpretation of the surgical pathology specimens and cytopathology. Correlations in the area of anatomic pathology will be stressed along with correlations between anatomic pathology and aspects of clinical pathology. The students will rotate through the clinical laboratory to strengthen their knowledge of the basic sciences and to observe the relationship between the clinical laboratory with the clinician. This is designed to give the extern, in addition to the understanding of laboratory medicine, the range, scope and limitations of the laboratorian in patient care.

*Clerkship Elective, Baltimore City Hospitals*—Eight associated hospitals in the metropolitan area have agreed to take a limited number of students into their pathology departments for participation in all aspects of the daily routine of these laboratories. The course is designed to give the student exposure to aspects of the practice of pathology away from the academic setting. The training is mainly an apprentice type training with student accompanying his teacher or teachers during performance of daily duties which might be in the field of clinical pathology, such as hematology, blood banking, clinical chemistry or microbiology or it may be in the field of anatomical pathology with autopsies, surgical pathology or cytology. This course affords the student with the opportunity to observe first hand the practice of pathology in the hospital environment.

*PATH 542—Surgical Pathology Elective*—A course of practical instruction in the gross and microscopic examination and interpretation of pathological changes in surgical specimens. This course is intended for students who are considering a career in hospital pathology, surgery, gynecology or radiotherapy. After preliminary instruction, participating students will have an opportunity to take part in the daily cutting of surgical specimens in rotation with pathology residents and to personally examine the slides of the tissue blocks they cut. They will then read out the slides with the consultant pathologist, using a microscope with dual eyepiece heads. They will attend surgical histopathology conferences twice weekly for which slides and brief histories are put out in advance and other relevant departmental conferences.

*PATH 543—Autopsy Pathology Elective*—The student will serve as an extern in pathology. He will be instructed in the technique of autopsy and will perform supervised autopsies in rotation with other interns and first year residents assigned to the autopsy service. This will include abstracting the clinical history, performing the autopsy, demonstration of the gross dissection to a consultant from the department and to clinicians, preparation of the provisional anatomic diagnoses and a clinicopathologic discussion.

*PATH 544—Enzymatic and Determinative Histochemistry Elective*—In this course the student is taught the principles of and practice of histochemistry for light and electron microscopy. Emphasis will be placed on both theoretical and practical aspects. The syllabus includes the preparation of tissue for histochemical tests, including chemical fixation and freezing methods, the chemical basis of common histological stains, histochemical analysis of chemical components of cells and tissues, enzyme histochemistry and autoradiography.

*PATH 545—Laboratory Medicine Elective*—The student will serve as an extern in the clinical pathology laboratories. The course is designed to promote understanding of the role of the clinical laboratories and laboratory procedures in arriving at diagnoses and monitoring treatment. This entails assignment to a particular division of the clinical laboratories such as hematology, clinical chemistry or microbiology. Patient rounds as a follow up of abnormal laboratory results are included. Conferences and tutorial sessions on the service involved will promote understanding of all unusual results. The students will participate in laboratory procedures as well as in departmental and interdepartmental conferences where they present and analyze the laboratory findings on particular patients.

*PATH 546—Forensic Pathology Elective*—Students coming to the Medical Examiner's Office who are interested in chemistry will spend two-thirds of the time in forensic pathology and one-third in toxicology. Active participation in all routine functions of this office including in particular the autopsy room with special emphasis being placed on teaching students the medical-legal autopsy technique and the writing of medical-legal protocol. Each morning rounds are conducted at which time individual cases and their medical-legal backgrounds are discussed and the significance of injuries on external examination is pointed out. Subsequent autopsies are conducted by staff and residents and when it is felt that the student is capable of conducting his own autopsy such is encouraged. Each student will be encouraged to carry out a project on his own, the magnitude of which would depend upon the student's interest. Students participate in lectures and seminars conducted for the benefit of residents.

*PATH 547—Advanced Instruction in Experimental Pathology Elective*—This seminar course is offered throughout the year and may be taken for 1-3 credits. The course is conducted by faculty in the Department of Pathology who have special competence in investigative fields in pathology. The instruction is conducted in small groups and consists of both theoretical and practical teaching, consultation and extensive literature reading and discussion.



**PATH 548—*Research Seminar Elective***—These include seminars in cellular pathobiology, experimental pathology and electron microscopic investigation.

**PATH 551—*Colloquia in Human Disease Elective***—This is a weekly conference in which members of the faculty and housestaff, as well as visiting investigators, present results of their current investigative efforts. Because of the diverse nature of the group and because of the resources of the Baltimore area, these colloquia consider over a year's time most aspects of modern pathology.

**PATH 552—*Principles of General and Cellular Pathobiology Elective***—This course presents lectures spanning the entire field of present-day pathology, mainly from the aspect of concepts and methodology of diagnostic and experimental investigation. The topics of the course include the subjects of the field which are currently summarized under anatomical pathology, forensic pathology, clinical pathology and related subjects. It proposes to teach a unified concept of pathology from the aspect of morphology (including electron microscopy at low and high resolution) and of function. The course will cover the following subjects: autopsy orientation, forensic orientation, surgical pathology orientation, neuropathology orientation, cytology, light microscopy, electron microscopy, photography, principles of histochemistry and basic chemistry, cell biology, cell injury, neoplasia, microscopy, molecular biology, genetics and cytogenetics, tissue culture, cell cycle, immunology and inflammation. Instrumentation will be covered extensively, as well as hematology.

**PATH 553—*Instrumental (Light and Electron Microscopy) Elective***—This is a course designed

to teach the student the fundamentals of optical instrumentation including consideration of bright field light microscopy, phase microscopy, polarization and interference microscopy, fluorescence microscopy, transmission and scanning electron microscopy, including thin sectioning, negative staining, freeze etching and shadow casting, scanning electron microscopy, optical processing of electron microscopic images and principles of vacuum technique.

**PATH 554—*Clerkship in Neuropathology Elective***—The student participating in this course will be integrated in all activities of the Division of Neuropathology. There are numerous conferences with participation of several departments involved in neurosciences. These conferences such as cutting brains derived from autopsies are particularly basic and deliver an intensive insight into problems of neuropathology. The division is also participating in several connected areas of interest such as a research program in muscle diseases. The teaching is mainly apprentice type with individual study sessions during which the student can do independent work according to his level of competence.

**PATH 555—*Advanced Neuropathology Elective***—This course consists of lectures and seminars which are presented by a team of teachers and investigators. The new developments in neuroscience are presented in areas of anatomy, pathology and neurobiochemistry. The course is designed for the student in pathology and neurobiochemistry. It will advance the basic understanding for the beginning investigator in neuroscience. The topics are divided into a block system of four sections which will be discussed by representatives from the fields of anatomy, biochemistry, pathology and pharmacology.



**PATH 558—Research Elective**—This course consists of project type research with selection of the projects to match the interests of the student, the time available, the research facilities and the competency of the faculty and the student. In general the course activity combines both exposure to a particular field of research and broad training in all aspects of cell biology through seminar and informal exchange between teachers and peers. Although a degree of freedom exists to accommodate each particular interest and project it is intended to make the course self-sufficient in order to provide well-

founded training in cellular pathology, its techniques and concepts. The opportunities are (1) immunology; (2) bioenergetics; (3) models of cell injury, and (4) carcinogenesis.

**PATH 559—Research in Clinical Science Elective**—Research in these areas represent a combination of basic science and study of patient material. Areas include: (1) immediate autopsy; (2) research in neuropathology; (3) studies of the basic mechanism of cellular response in the kidney, and (4) studies in selected fields of hematology.

## PEDIATRICS

The Department of Pediatrics plays a vital and dynamic role in the educational process at the undergraduate (medical school), graduate (residency) and post-graduate (continuing education) level. In the educational role, the goals of the department are to prepare the present and future physician to provide quality comprehensive medical care to children, now and in the future.

The department has broadened its concept of the children's physician to include not only the important office practitioner, but also the basic scientist, the health educator, the subspe-

cialist, the hospital academician and the community health planner. Above all, the physician for children must be a sensitive human being which is summed up in the credo—Love, Concern and Excellence. Our effort is to make the educational program meet the needs of the individual physician as well as to provide the best possible services for children.

A clinical clerkship experience is offered with inpatients, full-term infants and ambulatory patients in addition to a wide variety of elective experiences including basic research.

## UNDERGRADUATE MEDICAL PROGRAM

### Second Year

**PEDI 520—Laboratory Research Problems Elective**—Students will be required to set up laboratory procedures to be used by them in the study of a research problem. Problems will be selected in order that a fairly complete project can be done by the students in their elective time over a period of one year. Emphasis will be made on the accuracy and reliability of standard techniques as applied to the detailed analysis of their research problem.

### Third Year

**PEDI 530—Clerkship**—Students are assigned as clinical clerks for a period of six weeks at the University of Maryland Hospital, Mercy Hospital, Baltimore City Hospital, or Sinai Hospital. In each of the aforementioned teaching areas they are given clinical exposure and experience on the pediatric wards, in the pediatric ambulatory area and in the nursery area. When the student is on the wards, rounds are attended daily.

When the student is in the Outpatient Department, fulltime and parttime pediatric attending staff will consult with them on each patient seen. Fulltime nursery medical personnel are available to make rounds during their time in the nursery. The students are assigned tutors who meet with their students twice weekly or more in each of the hospital settings.

Regularly scheduled conferences are held covering x-ray diagnosis, cardiology, journal reviews, chart conferences, neonatal mortality, case discussions and metabolic diseases. Discussions cover concepts of the pathophysiology and therapeutic management of pediatric patients. The total impact of the illness on the child and family complex is emphasized and the student is encouraged to become familiar with all aspects of pediatric practice.

### Fourth Year

**PEDI 541—Ward Clerkship Elective, University of Maryland Hospital**—The purpose of this rotation is to provide the student with an experience as acting intern with responsibility of primary

care for patients on the pediatric service. Students will be supervised by the ward resident, chief resident and interns and are expected to participate in all the activities of the ward i.e. attending rounds and case presentations at conferences. It is hoped that the student will become more aware of the special problems in dealing with children and of the concepts of growth and development and their effects on disease.

*Elective Program in Pediatrics, Mercy Hospital*—Intern responsibilities at Mercy Hospital include care of inpatients, outpatients and newborns. Attendance is expected at the regularly scheduled new admission and other departmental conferences. Participation in special studies is at the discretion of the student. The goal of the course is to enhance skills in clinical problem solving particularly as they pertain to pediatrics and infectious disease.

*Hospital Community Pediatric Elective, York (Pa.) Hospital*—This course presents an opportunity for involvement in the inpatient care of private and service pediatric patients under the direction of certified specialists in pediatrics. It includes involvement in the outpatient care of clinic population, participation in a multidisciplinary children's growth and development clinic for the evaluation of children with a range of handicapping conditions and an opportunity for pediatric preceptorship as an internal elective in the program. The elective also includes the inpatient care of service newborns in both regular and special care nurseries.

*Pediatric Elective, Provident Hospital*—The goal of the course is to provide the student with controlled opportunity to actively participate in all facets of providing health care for children in a community hospital setting. Students will be under direct supervision of the chief of service,



private attending pediatricians and/or preceptee/resident and will be assigned to the pediatric ward, nursery and ambulatory services.

*PEDI 542—Ambulatory Pediatrics Elective, Pediatric Outpatient Department Clinic*—Students will be working in the Outpatient Department pediatric clinic with or without exposure to the various subspecialty clinics operated there which include: seizure, cardiology, central evaluation clinic for children, renal, endocrine, hematology, allergy, neurology, adolescent and behavioral clinics. A specialized program may easily be tailored to the needs of the student. Students will be expected to work in the emergency room on occasion from 5-11 p.m. at which time consultation by residents will be available. The student will be encouraged to become involved in the screening and acute care of children under supervision as well as in the general care of ambulatory patients.

*PEDI 543—Ambulatory Pediatrics Elective, Community Pediatric Center*—The Community Pediatric Center is a multidisciplinary primary care facility with the responsibility of giving preventive care, proven health surveillance and treatment of specific illness to a target population living in a circumscribed geographic area surrounding University of Maryland Hospital. The staff includes pediatricians, public health nurses, dentists, psychologists, social workers, nutritionists and health educators. The student will have the opportunity to work in the various clinics as a member of a team involving two or more of the above professionals. The student will have the opportunity to make home visits with the public health nurse or social worker, to visit the elementary schools in the area with one of the staff physicians or psychologists, visit the School for the Blind, the Baer school for the physically handicapped and PS #1 for pregnant teenagers.





Field trips, depending on the individual areas of interests of the students, will also be arranged.

*Comprehensive Pediatric Care in a Rural Settings as a Model Elective, Cumberland, Md.*—The purpose of this elective is to familiarize the student with comprehensive pediatric care in a rural setting. The Children's Medical Group will make available its facilities in order that the student may observe and participate in an academically-oriented practice involving all socio-economic groups. In addition, the students will have an opportunity to observe and work with the public health officials and other social agencies in order to better understand the interrelationships of governmental agencies and private practice. There will also be an opportunity to learn about school health and its practical implications. The objective of the entire course will be for the student to understand the effective delivery of health care.

*PEDI 544—Private Practice Elective*—This is a preceptor relationship with a practicing pediatrician. The students have the opportunity to participate in private practice on a daily basis. They workup patients in offices and clinics, also join ward rounds and conferences at the community hospitals. Above all, the students can see the activities, personalities, rewards and frustrations that encompass a busy medical practice.

*Pediatric Preceptorship Elective, Carroll County Hospital and Carroll County Children's Center, Westminster, Md.*—This is an excellent opportunity for the pediatric resident, intern or senior student to see and participate in a unique practice. A practice that is quite different from that of an urban area and also different from that of Baltimore. As a private practice with a significant number of hospital patients, nursery patients and office referrals, the type of problems evaluated and treated cover the whole pediatric department practice. All social-economic levels of families are treated as equal as is possible and it is an excellent opportunity to learn about the method of having efficiency in office practice that also applies to small clinics. The resident physician would have full participation in the practice doing the same thing that the practitioners are performing.

*PEDI 545—Pediatric Allergy Elective*—The preceptorship in pediatric allergy includes direct patient contact with the supervision of the clinical staff. Allergic problems constitute a large part of medical practice. The diagnoses and management of these problems are emphasized. The student may also participate in a clinical research project.

*PEDI 546—Pediatric Endocrinology Elective*—The goals of the course are to offer exposure to a variety of pediatric endocrine disorders namely, evaluation of the short child, diabetes insipidus,

thyroid, adrenal and gonadal disorders, and diabetes mellitus as well as to explain the principles of laboratory determinations such as urinary steroids and radioimmunoassay.

*PEDI 547—Exceptional Child/Seizure Elective*—This is an experience working with children who have seizures or organic behavior disturbances. The student would participate in the diagnostic procedure and would become familiar with the specialized laboratory procedures and their utility. This would include particular emphasis on the electroencephalogram. The student would also work with the staff and follow patients to provide an exposure to the current treatment processes especially the use of chemotherapy and patient counseling.

*PEDI 551—Handicapped and Atypical Children Elective*—A wide range of experience with handicapped and atypical children, tailored to the interest of the student are offered. The student will be able to participate in the workup of patients in the central evaluation clinic for children. This is an interdisciplinary diagnostic and evaluation clinic for children with multiple handicaps and/or problems of development and learning. The types of problems commonly seen include: mental retardation, cerebral palsy, language disorders, learning disabilities and behavior problems. Visits to the William S. Baer School, the United Cerebral Palsy Delrey Center and Maryland School for the Blind and other special centers are a part of the program. The student will have the opportunity to see a variety of handicapping conditions of childhood. The rehabilitation theme is emphasized as is the role of the physician in an interdisciplinary setting.

*PEDI 552—Neonatology Elective*—The student performs admission and discharge physicals and visits and talks with the mothers. He rounds in both full-term and intensive care nurseries, is responsible for assigned patients in the ICU nursery and works closely with the pediatric resident. The experience should aid in understanding the total care of the normal newborn, the problems of the sick and immature newborn and current methods of treatment.

*PEDI 553—Pediatric Neurology Elective*—An elective experience is offered for the study of normal neurologic development (as reflected by motor, social, language and adaptive behavior) from birth through childhood. Patients from the nursery, wards and outpatient departments of University of Maryland Hospital will be examined for developmental disturbances and diseases of the nervous system. This course might be of interest to people contemplating careers in family practice, pediatrics, neurology or psychiatry since these areas of medical practice must all deal with neurologic development in some way.

## PHYSIOLOGY

The department provides lecture, laboratory and seminar courses in the principles of mammalian physiology to students of medicine and of physical

therapy and advanced courses in special areas of physiology to graduate students, fellows and interested medical students.

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

MPHY 501—*Principles of Physiology*—Four lectures, two conferences and one laboratory session (elective) a week during the spring semester. A course in the principles of human physiology covering cardiovascular, renal, respiratory, gastrointestinal and endocrine physiology. Conference periods are used for clinical correlations and small group discussions. Under some circumstances, a limited number of students may elect one of two complementary (or alternative) programs: (1) laboratory work and/or library reading with written reports and conferences or (2) applied physiology, a case study approach to physiology in collaboration with one or more clinical departments.

Advanced seminars and/or research in special areas of physiology are open to interested stu-

dents who have completed their first year. Combined MD-MS and MD-PhD programs, requiring additional course work and original research, are offered for highly qualified students.

#### *Fourth Year*

MPHY 541—*Teaching in Physiology Elective*—Provides the student with the opportunity to teach in the first year physiology course, lectures, conferences and laboratory.

MPHY 542—*Seminars in Physiology Elective*—Advanced graduate seminars in selected fields of physiology (e.g. cardiovascular, renal, endocrine and neural) are offered, usually two each semester.

MPHY 548—*Research in Physiology Elective*—Provides the student with the opportunity to do research in selected fields of physiology.

## PSYCHIATRY

The general goal of the undergraduate psychiatric education is an understanding of human behavior and mental health and illness based on the behavioral sciences and on clinical knowledge. In order to achieve this goal, two major undergraduate programs have evolved: (a) a *basic program* designed to meet the requirements of the present curriculum of the medical school for the teaching of psychiatry and behavioral science, and (b) an *accelerated track* which is offered as an advanced elective to selected students with a special interest in the behavioral sciences.

The basic program is designed to educate medical students in regard to human behavior, with special reference to health and illness. This program, based on the behavioral sciences and on clinical knowledge, consists of three

phases: (1) the first phase (freshman and sophomore years) offers an integrated behavioral science-clinical psychiatry program preparing the student for his clinical clerkships; (2) the second phase (junior year) provides clinical psychiatric experience designed to integrate knowledge acquired in the first two years and to develop skills in patient care, and (3) the third phase (senior year) is optional and provides a variety of elective courses—clinical, didactic and research—for the student who is interested in furthering his knowledge and experience in some aspect of the theory and practice of psychiatry and related fields.

COLLABORATIVE TEACHING—The liaison division conducts collaborative teaching in surgery, medicine, ambulatory care and pediatrics.



## UNDERGRADUATE MEDICAL PROGRAM

### First Year

**PSYH 510—Introduction to Interviewing and Clinical Communication**—This course serves as an introduction to the program and consists of the following two units:

**Life Situations, Emotions and Illness**—First semester, six two-hour sessions. Focus is on interviews by the instructor with medical and surgical patients, aimed at developing a comprehensive view of the patient's medical, social and psychological problems. Special attention is paid to the reciprocal relationship between pathophysiology and medical-organic illness on the one hand and the patient's emotional state, adaptive-defensive mechanism, past personal history and present social-cultural context on the other. The emergence of the doctor-patient relationship is examined with reference to the total therapeutic effort. Student visits to patients on the wards and in their homes are reported to class.

**Introduction to Clinical Communication**—First semester, four two-hour sessions. This course provides the student with a set of concepts and techniques designed to develop effective communication skills in clinical transactions. Primary focus is on medical interviewing techniques with special reference to the organizing function of questions and effects of emotional factors in interpersonal communications, verbal and non-verbal. Instructional methods include the use of videotaped interviews and simulated interviewing exercises monitored by closed-circuit television.

**PSYH 511—Child Development**—First semester, six two-hour sessions. The significant maturational achievements in the various developmental stages of childhood and adolescence are used to illustrate how organism-environmental interaction becomes intrapsychic structure leading to adaptive interpersonal behavior. The focus primarily is on stage specific tasks as a major developmental concern with emphasis on the nature and function of attachment behavior and on the vicissitudes of individuation, socialization and acculturation. Instructional methods include films, videotaped material and small group discussions.

**PSYH 512—Medical Sociology**—Second semester, eight two-hour sessions. Goal is to acquaint students with the relationship between social factors, health and illness processes and the delivery of medical care. Films, videotaped material and small group discussions are used.

**PSYH 513—General Principles of Psychodynamics**—Second semester, eight two-hour sessions. Basic assumptions of the psychodynamic theory are presented with emphasis on their relevance to personality development and application to

clinical medicine. Focus is primarily on the motivational determinants of behavior (drives and their vicissitudes), structural and dynamic aspects of personality functioning in relationship to patterns of intrapsychic and interpersonal conflict and the resultant phenomenology of character and symptom formation. Lectures are followed by small group discussions.

**Psychophysiology and Behavioral Biology**—Second semester, eight one-hour sessions. Objective is to impart the basic knowledge, principles and philosophy of psychophysiology and behavioral science in relation to the other basic medical science learning necessary for the development of technically competent and sensitive physicians.

**Neurobiological Correlates of Behavior**—Second semester, eight one-hour sessions. Neurobiological determinants of behavior are conceptualized in terms of the structure and function of the nervous system. Initial sessions include an overview of biological psychiatry. The relevance of neurobiological data and theory to clinical issues is noted throughout.

### Second Year

**PSYH 520—Introduction to Clinical Psychiatry-Psychopathology (32)**—First semester. Focus is on symptom identification and psychiatric diagnoses; psychopathology is demonstrated by films, videotape and interviews of live patients. Students identify and quantitatively grade symptoms and utilize a systematic flow chart for making diagnoses.

**Introduction to Clinical Psychiatry-Recording Data and Planning Treatment (24)**—Second semester. Practice write-ups by students of psychiatric histories, mental status examination, psychodynamic formulation and family dynamic formulations. Discussion-demonstration of somatic therapies, insight psychotherapy, behavior modification and group therapy.

### Third Year

**PSYH 530—Clinical Clerkships**—Two major alternative clinical clerkships are offered: (1) three-week clerkship (combined with a three-week clerkship in neurology) and a (2) six-week clerkship. The assignment of students to these clerkships is made on the basis of the student's preference. All students attend, for six weeks, psychiatry didactic sessions on Thursday mornings and neurology didactic sessions on Thursday afternoons. Psychiatric seminars include: (1) review of clinical psychiatry (two and one-half hour weekly sessions), and (2) review of child psychiatry (one hour weekly sessions).

Three-week clerkships are taken by approximately one-half of the junior class at Spring Grove State Hospital in rotations containing groups of four to six students each. The basic experience is inpatient work with recently psy-

chotic patients. Ward meetings, clinical conferences and seminars are conducted by hospital staff and by visiting faculty from the Institute of Psychiatry and Human Behavior.

Six-week clerkships are taken by the one-half of the class which does not elect neurology in the junior year; approximately 12 students are included in a rotation. Four six-week options are available, each offering a differentiated clinical experience in accordance with the individual career interests of the students. In addition to the Thursday joint didactic sessions, these students attend the following seminars given at the Institute of Psychiatry and Human Behavior: alcoholism and drug abuse, psychological testing, diagnostic interviewing and drug therapy.

Combined clinical clerkships are also offered in the Institute of Psychiatry and Human Behavior. This involves a concurrent assignment to the adult inpatient division (wards 2-G, 3-G and 3-F), brief therapy clinic and liaison psychiatry division. The inpatient experience is structured around the assumption of responsibility for the work-up and beginning treatment of a newly admitted patient under the supervision of a ward administrator and a resident preceptor. The student participates in staff meetings, milieu therapy activities, psychodrama sessions and preadmission home visits (in a preceptorship with a social work student under the supervision of a social worker). The outpatient experience involves intensively supervised work with patients in the brief therapy clinic supplemented by a students' clinical care conference and a seminar on psychosocial issues. Concurrent liaison division activities include supervised work with patients in the general hospital, attendance at a weekly literature review seminar and a psychosomatic conference.

Community psychiatry clinical clerkships are available on ward 2-F and the community mental health clinics of the Inner City Community Mental Health Program. The main focus of the inpatient experience is on short-term management, family interviewing, group therapy, milieu therapy, home visits and crisis intervention. Students are also assigned to one of the satellite community clinics and gain field experiences within the catchment area of the program.

Child psychiatry clinical clerkships are conducted through the Division of Child and Adolescent Services. The major assignment is to the Steuart Hill School. This program provides a unique opportunity for students to work closely with children in the classroom, make home visits and obtain family and developmental histories. Student findings are presented to the weekly staff conference. Students also attend the Monday morning child observation seminar conducted jointly at the Community Pediatric Center of the Department of Pediatrics, as well as, all seminars in the adult psychiatry junior program. An additional option is an assignment to the Maryland Institute for Children. These students are as-

signed to study one of the "living" groups of institutionalized disturbed children and observe preschool normal children in a day care center.

Private psychiatric hospital clinical clerkships involve assignment to the affiliated hospitals, Sheppard and Enoch Pratt Hospital and Seton Psychiatric Institute. It focuses primarily on supervised work with hospitalized patients and includes participation in milieu therapy, group therapy and ongoing staff conferences. Students also have the opportunity to work in the crisis clinic and to participate in the consultative liaison program at the Greater Baltimore Medical Center.

#### *Fourth Year*

**PSYH 541—*Brief Psychotherapy Elective***—The student would see individual patients in psychotherapy, acting as the primary physician while receiving close supervision. Options are available for seeing families, couples and/or groups in therapy and having an experience with forensic psychiatry. A weekly clinical case conference is held. Goals would include: to learn how to interview, to further one's understanding of the patient-doctor relationship and of the psychodynamics of behavior and to provide a clinical experience in treating emotionally upset individuals.

**PSYH 542—*Intensive Individual Psychotherapy Elective***—Students will participate in the basic brief therapy clinic curriculum. During this elective the student will be occupied in clinical work, seminars and reading which will cover both clinical and didactic material.

**PSYH 543—*Psychiatry for the Medical Practitioner Elective***—This is a clinically-oriented course designed to provide a broad experience in those aspects of psychiatry which are relevant to the general practice of medicine. The emphasis will be on clinical exposure and direct patient responsibility in conjunction with close faculty supervision. The aim of the course will be to develop clinical skill in recognizing psychiatric illness, understanding of dynamic etiology and applying those therapeutic skills which may be successfully utilized by the nonpsychiatric specialist. In addition, attention will be directed to the psychological aspects of the management of general medical patients.

**PSYH 544—*Community Psychiatry Elective***—This course offers inpatient clinical experience in community psychiatry in the psychiatric ward (2-F, Institute of Psychiatry and Human Behavior) of the Inner City Community Mental Health Program.

**PSYH 545—*Program for the Study of Violent Behavior Elective***—The program, under the auspices of the adult outpatient psychiatric clinic,



includes the evaluation and treatment of individuals prone to impulsive and aggressive outbursts. Typical individuals are those who complain of temper difficulties, violence in association with drinking (pathological intoxication), reckless driving practices and frequent loss of control over hostile urges leading to repetitive assaultive or destructive acts. Particular interest is focused on the "self-referred" patient who seeks help on his own rather than being sent by the courts; such former patients are frequently shunned in conventional psychiatric settings because they generate anxiety.

Evaluation is twofold: psychodynamic and organic. A complete anamnesis is obtained to elicit family patterns and neuropathic traits. In addition, questions are asked regarding head injury, seizure-like conditions or other evidence of brain dysfunction which might contribute to the poor control over impulses and the paroxysmal expression of violence. When indicated, neurological consultation is requested. Existing EEG facilities in the clinic are available.

Treatment is individual and group, together with a variety of medications. The program is weighed on the aspect of treatment and participants are urged to take part in active therapy.

**PSYH 546—Preventive and Community Psychiatry for Children Elective**—This program provides an unique opportunity for the trainee to observe, interact and intervene as an agent of change with a group of children from 4-13 years of age in their normal milieu with their families, the school and other community agencies. The trainee functions in an interdisciplinary approach to the multi-faceted aspects of children

and community systems. Psychomotor development, including cognition, family and community interactions and consultative functioning are emphasized. Though a specific approach is presented, a student may select additionally any interest innovatively his own.

**PSYH 547—Outpatient Child Psychiatry Elective**—This elective involves primarily an experience in working with disturbed children in an outpatient setting under supervision. The medical student will participate in the regular intake in the brief service clinic in collaboration with the fellow assigned to child psychiatry (preferably a second-year fellow). He will be instrumental in implementing the disposition which he and the fellow had previously agreed upon and will also participate in a few ongoing seminars such as child development or family therapy in the CPC.

**PSYH 551—Pediatric Psychiatric Consultation Elective**—This elective involves consultative work with child and adolescent referrals from the Department of Pediatrics. Didactic seminars are held jointly with the Division of Adolescent Medicine on a weekly basis.

**PSYH 552—Alcoholism and Drug Addiction Elective**—This course involves an intensive experience in clinical services with alcoholics and drug abusers. Patients will be seen in the emergency room, on medical, surgical and psychiatric wards, outpatient clinics for alcoholics and drug abusers, halfway houses, quarterway houses, detoxification units for alcoholics and narcotic addicts. Study of the methadone program is also indicated. This course will include: (1) three



groups of seminars—theory and diagnostic seminar, bibliography seminar and continuous case supervision; (2) group experience with alcoholics and drug abusers and their families, and (3) personal supervision.

**PSYH 553—*Practicum in Marriage and Family Counseling Elective***—This course will provide a series of seminars, selected reading and a practicum experience in marriage and family counseling. Physicians of all specialties are frequently sought by patients as marriage counselors. More frequently, however, physicians work with patients who have as an underlying complaint or a major problem, communication with the spouse and children. The brief therapy clinic, open clinic, Outpatient Department and family medicine clinic will provide sources of patient populations with marital problems. Weekly seminars in the theory and practice of marriage and family counseling, individual supervision, group supervision, a seminar in the communication skills and group process, a series of audiovisual experiences and individual practicum in marriage and family counseling will be the methods of teaching.

**PSYH 561—*Family Dynamics and Treatment Elective***—This is a clinically-oriented course in which the dynamics of families are explored and strategies of intervention elaborated. The case seminar method will be supplemented with audiovisual material for illustrative purposes.

**PSYH 562—*Recognition, Control and Prevention of Drug Abuse Elective***—Drug abuse has become a major health care problem. The community involvement in marijuana, LSD and other hallucinogenic drugs, as well as heroin, morphine and barbiturates, has presented a health problem. Many physicians are plagued by patients and families of patients who become involved in drug abuse. One goal of the course is to assist physicians to pick up early warning signs of drug abuse. Another is to give them techniques for working with drug abusers, to provide community control or to work with them in groups. Another goal is to influence each physician as to assume his role in community prevention.

**PSYH 563—*Sensitivity Training for Medical Personnel Elective***—This sensitivity laboratory experience will work towards improving communication skills among medical personnel. Issues and problems in nonverbal communication, verbal communication, leadership patterns, group behavior and communication among peers, supervisory personnel and subordinates. Reading seminars and a practicum experience will be the major methods of teaching.

**PSYH 564—*Seminar on Human Sexual Behavior Elective***—The purpose of the course is twofold:

(1) to desensitize the student regarding sexual topics so that he will feel more comfortable regarding his own sexuality and that of others and consequently will be able to respond without anxiety when presented with a sexual problem. and (2) to provide empirical data regarding "normal" and "abnormal" sexual behavior and some guidelines for dealing with common sexual difficulties.

**PSYH 565—*Hypnosis in Medical Practice Elective***—The course will cover the theories of hypnosis, induction techniques and practical applications of hypnosis in medicine, obstetrics and psychiatry. The student will have practice in induction techniques and simple procedures utilizing hypnosis under direct supervision.

**PSYH 566—*Seminar in the Psychology of Childhood and Adolescence Elective***—A survey of normal behavior and personality development during the formative years with particular emphasis on factors which may give rise to psychopathology. An integrative rather than a chronological approach with emphasis on social learning theory.

**PSYH 567—*Behavior Modification Elective***—Course will involve a survey of the theory and techniques of behavior modification and include demonstration of behavior therapy techniques. The seminar will focus not only on clinical application, but also on stimulating research in this area.

**PSYH 571—*Theory and Research in Psychosomatic Medicine Elective***—The purpose of this course is to give the medical student an overview of current thinking and research as to the interaction of psychological and social variables in the pathogenesis of disease. The student will also have the option of participating in research projects in the field in the coronary care and Center for the Study of Trauma units of University of Maryland Hospital.

**PSYH 572—*A Seminar in the Urban Environment and Medical Practice Elective***—This course will provide the interested student with an opportunity to learn about and carry out a research project which relates medicine to the urban environment or to group processes. Seminars and reading assignments will be provided which encourage the understanding of changing social systems within the urban environment. An examination of these processes will be made from an interdisciplinary approach. During the process of developing a theoretical frame of reference, students will participate in their own research project. The goal of the course is to assist students to better understand the problems of a dynamic urban community as they relate to the practice and study of medicine. Another goal is



to encourage the student's interest in utilizing his clinical data for problem solving in the areas of group process (i.e., rapidly changing institutions of education, work associations, urban community life and health care delivery). This type of course is directed towards assisting the individual physician to more effectively utilize the knowledge of the behavioral sciences for providing for adequate health care.

**PSYH 573—*Problems in the Delivery of Health Care Elective***—The purpose of this course is to acquaint the student with various problems currently being experienced in the delivery of health care. At the completion of the course the student will be expected to have an overall view of the difficulties involved in delivering health care in the United States. He will also be expected to have a more detailed understanding of the difficulties involved in a specific setting of his choice. The course will detail how different social factors influence the delivery of health care in the United States and point out the many problems which arise when these social factors are not taken into consideration. Alternative forms of health care delivery will also be discussed.

**PSYH 574—*Forensic Psychiatry Elective***—Forensic psychiatry deals with various aspects of human behavior as they apply to the law. The court psychiatrists assist the court in evaluating the individual so true justice can prevail, society be protected and the individual rehabilitated. This course is totally flexible in time, from a one-time morning visit to the Medical Office at the Court House to a fulltime program. The course covers lectures on the structure of the courts and various psychiatric-legal tests, visits to courtrooms, correctional institutions and training schools, examinations of offenders, staff conferences, mock trial and participation in law school seminars when possible. Students in the brief psychotherapy elective have found this a useful adjunct to that program.

**PSYH 575—*Research Seminar in Psycholinguistics and Communication Elective***—This is a part-time elective that will consist of a seminar and a project.

**PSYH 576—*Research in Clinical Psychiatry Elective***—It will involve collection and analysis of clinical data descriptive of patients.

**PSYH 577—*Biologic Bases and Correlates of Behavior Elective***—A series of discussions of biological factors underlying behavior patterns including e.g. perception, motivation, aggression and learning. Discussions will be associated with selected readings, tapes, models etc. at an advanced level, in some cases presented by the staff and in others by the students. Frequently

discussion will arise out of consideration of a clinical problem.

**PSYH 581—*Bio-behavioral Journal Club Elective***—Discussion of current literature.

**PSYH 582—*Research in Neurobiology in Psychiatry Elective***—This will involve the student's active participation in laboratory and experimental research. Arrangements will be made individually and will be based on the student's knowledge, interests, capabilities and goals.

**PSYH 583—*Neurology of Behavior Elective***—Introduction to the functions of the frontal lobe, amygdala, temporal lobe and such limbic structures as are practicable by taking histories from and examining patients at first under supervision and then on a student's own using standard techniques of the neurologic examination on children and adults—especially those for higher cortical function.

**PSYH 584—*General Psychiatry, York (Pa.) Hospital, Elective***—An opportunity exists for intensive work with a small number of patients with individual supervision provided. Instruction is also given in basic psychodynamics and psychopathology. Patients are primarily psychiatric inpatients, but also included are medical or surgical service and emergency room patients requiring psychiatric consultation and intervention. There is also an opportunity to learn about drug and alcoholism problems and their protean manifestations. A variety of treatment approaches are used in this hospital including chemotherapy, individual, family and group psychotherapy and Indoclon or electroconvulsive therapy in cases where proper indications are present.

## OTHER PROGRAMS

***Combined Accelerated Track***—In 1970, the department inaugurated a new program in psychiatric education. This begins in the freshman year and allows selected students, after four years of combined basic medical-psychiatric specialty training, to graduate with an equivalent of one year of residency in psychiatry.

This sequence was designed to provide a unique educational experience for students with special interest in the behavioral sciences. It is further integrated with internship and psychiatric residency training, thus offering selected students an opportunity to complete their basic medical and psychiatric specialty training in six years. It can be further expanded to offer opportunities for subspecialization in psychiatry and/or for graduate training in one of the behavioral or biological sciences.

The main features of this new track include early and intensive training in psychiatry and behavioral sciences, organized around a curriculum which involves a sequence integrating closely supervised clinical work with behavioral science teaching. The program uses elective and extra-curricular time and relies heavily on the students' motivation. It is supported by a large teaching faculty serving as reading advisors, seminar leaders, psychotherapists and psychotherapy supervisors.

## FELLOWSHIPS

This eight-week program, supported by the National Institute of Mental Health and medical school traineeships, is offered each summer to 16 students. Students are assigned to the various clinical facilities of the Institute of Psychiatry and Human Behavior and participate in an intensive program which includes closely supervised clinical work, conferences and seminars, and involvement in individual clinical and research projects.

## RADIOLOGY

Since 1895, when Wilhelm Conrad Roentgen, a German physicist, discovered the x-ray, its use and that of other forms of radiant energy have been greatly expanded in our society. The greatest use has been in medicine where the use of x-rays, radium and other radioactive materials extends to all phases of patient care and research.

The Department of Radiology offers the medical student an opportunity for a program with a broad base in radiology through teaching conferences in the department as well as those held in conjunction with other basic science and clinical departments. All types of teaching methods are used and combined to enhance the learning process so that the student should be able to use this radiology training in any field of medicine which he may choose.

The Department of Radiology in the University of Maryland Hospital was established in 1911 and was the first such department in a Baltimore hospital. In 1956, separate divisions of diagnosis and therapy were established with experienced diagnostic radiologists, ra-

diation therapists, physicists and biologists, all of whom contribute to the educational program. While for many years the department was involved mainly in patient care and teaching, in recent years research has become a much more prominent departmental activity. New methods of teaching radiology, both as a separate and integrated discipline, are continually being explored.



## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

*Radiologic Anatomy*—First semester. A correlated course is given in conjunction with the Department of Anatomy. This course consists of nine lecture-demonstrations devoted to the skull, chest, gastrointestinal tract, genitourinary tract, spine and joints. Not only is the normal anatomy shown, but the radiologic aspects of a few patho-



logic processes are also shown for emphasis and correlation.

#### Third Year

*Radiologic Orientation I*—A series of nine lecture-demonstrations are given to students during their medicine rotation. Emphasis is placed upon pulmonary disease. Radiologic-pathologic correlation is stressed.

#### Fourth Year

*RADL 540—Radiologic Orientation II*—Small groups of students are assigned for a period of two weeks to the diagnostic division of the Department of Radiology. The group is further subdivided with one group being assigned to Mercy Hospital and the other one to University of Maryland Hospital. The students are taught radiology from the standpoint of radiologists and how to use radiologists as consultants. They are rotated through the fluoroscopy, special procedures and general diagnostic areas. Special conferences are presented daily to the students by

the faculty and the residents. They also attend all departmental teaching conferences and some joint conferences held with other departments.

*RADL 541—General Radiology Elective, Maryland General Hospital*—The Department of Radiology at Maryland General Hospital provides for general radio-diagnostic procedures including special procedures. Limited conventional type radiotherapy is given. The student will have the opportunity to participate in all diagnostic endeavors in the department. The department is fully supervised by three, fully qualified radiologists.

### GRADUATE STUDIES

A four-year residency is offered in both diagnostic and therapeutic radiology at the University of Maryland Hospital. The teaching program is carried out through patient care, under the supervision of a fulltime staff, didactic lessons and numerous teaching conferences.

## REHABILITATION MEDICINE

Rehabilitation medicine is a broad term referring to the medical treatment and management of patients with disability due to neuromuscular and musculoskeletal impairments and the associated psychosocial and vocational deficits. Physical medicine and rehabilitation is the medical specialty most intimately involved with rehabilitation medicine and is concerned with the specific diagnostic and therapeutic skills required in the comprehensive evaluation of impairment and the application of appropriate therapy for its amelioration or the adaptation of the individual to the impairment.

### UNDERGRADUATE MEDICAL PROGRAM

The department participates in several inter-departmental courses, namely ambulatory care in the senior year and introduction to medicine (physical diagnosis) in the sophomore year. Several electives are offered in the senior year as well. Through these teaching activities, and at the bedside, the department contributes to the students' knowledge of physical medicine and rehabilitation techniques in the diagnosis, evaluation and management of many disorders which have in common abnormalities of mobility. Opportunity is provided for the student to work

The department has a multidiscipline structure containing appropriate elements of the allied health disciplines in addition to the specialist in physical medicine and rehabilitation (physiatrist). These are: occupational therapy, physical therapy, speech pathology, social work and vocational counseling. The department provides diagnostic, evaluative, therapeutic and management services for the rehabilitation of patients of all ages who have in common some disorder of mobility. Its functions are largely complementary to the activities of the other medical disciplines.

with and learn the contributions of the allied health professions in the rehabilitation process.

#### Fourth Year

*REHB 541—Medical Rehabilitation Elective*—This course offers an introduction to the basic principles and practice of physical medicine and rehabilitation in the setting of a multidiscipline team approach. Functional evaluation of disability and setting of realistic goals for disabled patients can be practiced working with social service, vocational counseling, physical and occupational therapy services and the physiatrist as a team. The student will be introduced to electro-

myography with regards to its use as an aid to diagnosis in neuromuscular disorders. Experience will be gained with patients having a wide range of locomotor disorders. Participation in prosthetic, arthritis and hand clinics in addition to the regular activities of the department will be available.

*Rehabilitation Medicine-Inpatient Care Elective, Veterans Hospital, Ft. Howard*—This is a clinical clerkship on a 50-bed rehabilitation service. Students will be assigned patients for whom they will be responsible for total medical care. This responsibility will offer an opportunity to learn diagnosis and functional evaluation of patients with a multiplicity of disorders affecting mobility and the physician's role in the multidisciplinary methods required to effectively manage patients requiring medical rehabilitation. Students will be working with the allied health professions and become knowledgeable concerning their con-

tributions in health care. This latter aspect alone is important in preparing physicians to function in the changing world of health care.

## GRADUATE STUDIES

A three-year residency program in physical medicine and rehabilitation is offered for those physicians wishing to specialize in this field. The program involves three affiliated hospitals whose special strengths add to the excellence of training.

## FELLOWSHIPS

Fellowships of two months duration are available throughout the year for a limited number of students desiring in depth experience in rehabilitation medicine.

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## SOCIAL AND PREVENTIVE MEDICINE

The Department of Social and Preventive Medicine has three administrative divisions responsible for education, health services and clinical investigation. All three divisions have multidisciplinary faculties who differ only in their degree of responsibility for the overall research, teaching and service programs of the department.

The department has working relationships with the Johns Hopkins School of Hygiene, and with Sinai, Provident and the Public Health Service hospitals as well as with the state and city health departments.

### DIVISION OF EDUCATION

The faculty is responsible for organizing course material and teaching pre- and postdoctoral students of the schools of medicine, nursing and pharmacy. Some courses within the division are designed to present the student with information which will be helpful to him in deciding his role in future health care programs. Elective courses and individual projects are offered to medical students throughout their four years of schooling.

Faculty members conduct research for two reasons: (1) to extend his or her base of knowledge, and (2) to provide opportunities for the pre- and postdoctoral student to apply basic health care sciences to the practice of medicine. The broad areas of active research within the

division are: high blood pressure and its prevention; the prevention of coronary heart disease; the planning and evaluation of health care services; the causes and control of cancer, and the causes and control of infant mortality.

The division's general philosophy emphasizes interdepartmental, as well as interdisciplinary, learning, teaching and research. Day to day activities reflect this philosophy.

### DIVISION OF HEALTH SERVICES

The Division of Health Services consists of an interprofessional faculty dedicated to the application of operations research to the analysis of health care systems and to the design, implementation, surveillance and evaluation of improved forms of health care delivery as well as the training of interdisciplinary teams of health professionals and paraprofessionals. In addition, this division is concerned with the study of present health care management and design, development and evaluation of new forms of health care management.

Faculty in this area, as well as others in the department, are involved in community boards and committees which relate to delivery of health care. The division is actively involved with consumers and consumer organizations to achieve input of health care recipients in the development of improved health care systems.

Many divisional programs are conducted through the direction of the Office of Health Care Programs which is responsible for a large interdisciplinary staff and budget. It offers educational and training programs as well as elective



health services research experience within a variety of operational interdisciplinary settings.

## DIVISION OF CLINICAL INVESTIGATION

The division's prime occupation is coordination of multiclinic, cooperative, prospective clinical trials through the use of a multidisciplinary staff.

In addition to the teaching programs of the department, the division conducts a course in drug evaluation in the School of Pharmacy.

The division currently coordinates four cooperative clinical trials which are long-term studies with an estimated duration of ten years. They are: (1) the University Group Diabetes Program; (2) the National Coronary Drug Project; (3) the Diabetic Retinopathy Study, and (4) the Coronary Drug Project Aspirin Study.

A research services consultation unit to serve the medical school is under development within the division.

## UNDERGRADUATE MEDICAL PROGRAM

### First Year

PREV 510—*Introduction to the Organization of Health Services (18)*—First semester. The course includes a description of various modes of health care organization and characteristics which determine a health care system and discusses the roles of other health care personnel with emphasis placed on the issue of primary care. Directed field trips and small group discussions are included.

### Second Year

PREV 520—*Issues in Medical Care (10)*—First part of first semester. This course attempts to present an understanding of: the existing health services resources in the United States; the proposed national level changes in this system; existing systems of care in other countries; issues involved in the optimal utilization of resources, and the evaluation of a health care system. The course material is presented by lectures and small group discussions.

*Quantitative Medicine (22)*—Second half of first semester. The course presents concepts and methods of evaluation and interpretation of evidence; prepares students for a subsequent course in descriptive and applied epidemiology; teaches the application of scientific method to clinical and population studies; presents the concept of biologic variation and methods to describe and measure it; present concepts of disease causation, and teaches fundamental principles of disease control. The course is presented by lectures, small group discussions, review of published papers and individual exercises.

PREV 521—*Clinical Epidemiology (34)*—Second semester. The epidemiology of major diseases and the epidemiologic basis for diagnosis, prognosis, treatment, prevention and control of these diseases is taught by small group discussions and interdisciplinary seminars.

### Fourth Year

PREV 540—*Epidemiologic Basis for Clinical Practice Elective (18)*—Correlated with required ambulatory care clerkship. The 18 hours are divided into six sessions of three hours each. The purposes of the course are: to correlate clinical medicine, epidemiologic knowledge of the natural history and associations of disease, and understanding of the pathophysiology of disease; to demonstrate the application of epidemiologic knowledge to health maintenance and the treatment of disease within the practice of comprehensive ambulatory care; to develop protocols for high quality comprehensive care of ambulatory patients with a broad spectrum of health and disease problems and to consider current issues in the delivery and evaluation of medical care. Each session is organized as a discussion of one or two topics usually led by a department faculty member, joined when possible by a clinician specializing in the area. Students are encouraged to participate in the discussions and, when appropriate, to lead them.

PREV 541—*Clinical Preventive Medicine Elective*—A variety of elective opportunities in clinical preventive medicine are available to senior medical students. Students interested in acquiring senior credit in this area should contact the chairman of the department. The courses may include research opportunities (PREV 548) and clinical experience (PREV 541).

*Medical Care Administration Elective, Provident Hospital*—This course is restricted to senior students who have completed their clinical course requirements and who have a special interest in medical care administration as practiced in a voluntary nonprofit community hospital. Opportunities will be provided to students to undertake small studies in medical care administration under the guidance of a faculty member. The student will be given a review of a variety of administrative problems faced by the hospital in the recent past in order to facilitate the selection of a problem for study. On completion of the project, the student will be expected to present the findings and recommendations in the form of a report or paper.

PREV 542—*Introduction to Biostatistics I Elective*—This course is designed to serve as a general introduction to the understanding and application of statistical methodology. Topics include: (1) uses and misuses of statistics; (2) samples and populations; (3) observations and measurement; (4) interpretation of tabulated in-

formation (5) statistical tests and decision procedures, and (6) relationships between variables.

**PREV 543—*Introduction to Biostatistics II Elective***—This course is intended to teach basic statistical techniques with emphasis on biomedical applications. Topics include: (1) descriptive measures; (2) elementary probability; (3) hypothesis testing and statistical inferences; (4) regression and correlation; (5) analysis of variance, and (6) design of experiments.

## FELLOWSHIPS

Summer fellowships in community medicine, preventive medicine and epidemiology are offered to freshman and sophomore students. Freshmen may choose to observe the components of the medical care system including community institutions or agencies relating to specified topics of interest, activities of private physicians, or in special projects which are part of the department's activities. Individual elective clerkships in comprehensive and preventive medical care are arranged for senior medical students. Tuto-

rials in the epidemiologic basis for diagnosis, management and prevention of disorders in specified clinical specialties are arranged in coordination with the chairmen of the clinical departments in which senior students elect clerkship.

## GRADUATE AND POST-GRADUATE MEDICAL PROGRAM

The Department of Social and Preventive Medicine offers two residency positions in each of three years of training in addition to postdoctoral fellowships. The department emphasizes six major areas: epidemiology, clinical trials and program evaluation, medical sociology, medical care administration, health education and clinical preventive medicine. Each resident or fellow is given expert guidance in developing a curriculum to provide him with an opportunity to develop professional expertise in preventive medicine. Education in the sciences basic to preventive medicine can be coordinated with clinical experience in the major specialties. An internship is not required.

## SURGERY

The Department of Surgery is composed of six divisions: general surgery, neurosurgery, orthopedics, otolaryngology, thoracic and cardiovascular, and urology. The faculty of the various divisions participate in the teaching of anatomy, pathology, biochemistry and introduction to clinical medicine, but do not offer formal courses until students enter their clinical clerkships. During this nine-week period, time is divided between general surgery and the subspecialties of orthopedics, otolaryngology and urology. Students may have clerkships at the University of Maryland Hospital or at one or more affiliate hospitals (Mercy, Maryland General and Baltimore City).

Electives in surgical research and summer fellowships are available to students in all four years. More extensive clinical experience with greater patient responsibility is offered by all divisions to students as electives in their fourth year.

The objectives of the surgical clerkship are to give the student exposure to

those disease entities which can or should be treated by operative intervention and to those physiologic and metabolic alterations which arise from such intervention. Students are expected to gain experience in recognition of conditions which will require surgical consultation and gain appreciation of wound care as well as familiarity with basic emergency procedures. Experience should be gained which would allow the future internist, pediatrician or psychiatrist to be able to discuss with his patient the probable treatment and prognosis of various surgical diseases, as well as to give them opportunity to explore various surgical disciplines and to participate fully in the daily activities of surgical teams.

Graduates of approved medical schools will be considered for residencies in general surgery, neurological surgery, orthopedics, otolaryngology, thoracic and cardiovascular and urologic surgery.



## DIVISION OF GENERAL SURGERY UNDERGRADUATE MEDICAL PROGRAM

### Third Year

**GSUR 530**—The teaching of general surgery in the third year is conducted in the inpatient environment of the University of Maryland, Baltimore City, Maryland General and Mercy hospitals. Students are divided into groups of two or three for continuous assignment to individual patient areas. Upon admission to the service, selected patients are assigned to individual students who are expected to record a complete history, the results of a physical examination and required laboratory studies. A differential diagnosis, final diagnosis and recommendations for therapy must be included. Operation room participation is encouraged but not required.

The program is designed to give the student a broad overview of the fundamentals of the discipline of surgery in a clinical environment and includes contact with a wide variety of adult and pediatric patients. This includes patients with infections, neoplasms, trauma, endocrine disorders, vascular disease, gastrointestinal problems, metabolic disorders and congenital defects requiring extensive medical evaluation followed usually by surgical therapy.

The student is responsible for core reading material which is identical regardless of his hospital assignment. Conference schedules vary according to the hospital assignment. Emphasis throughout the course is placed on problem solving through correlation of basic science information with clinical diagnosis and management.

### Fourth Year

**GSUR 541—Elective Clerkships**—This elective allows the student to participate as an integral member of a surgical care team. Students are assigned to various wards at University of Maryland and affiliated hospitals by choice for a minimum of four weeks. Additional multiples of four weeks may be elected. Students are responsible for the history and physical examination and they participate actively in all patient care thus gaining a wide experience in surgical diagnosis and in pre, intra and postoperative management. Daily ward rounds are made with a faculty member. Formal conferences at the undergraduate and postgraduate level are available.

**Oncology Service Elective, University of Maryland Hospital**—This service conducts its teaching and training on patients with malignancies. There is special emphasis on cancers of the head and neck, breast and gastrointestinal tract.

**Gastrointestinal Surgery Elective, University of Maryland Hospital**—This service emphasizes major gastrointestinal surgical problems as well as elective and emergent general surgical problems.

**Vascular Surgery Elective, University of Maryland Hospital**—This service concentrates attention on diseases of arteries and veins as well as general surgical problems.

**Transplant Surgery Elective, University of Maryland Hospital**—Emphasis is placed on care and management of renal transplant patients as well as general surgical problems.

**Surgical Ward Clerkship Elective, Maryland General Hospital**—Each student is given supervised opportunity to be responsible for pre and postoperative care as well as to participate in operative procedures of patients assigned to his own service. A broad spectrum of general surgical and cardiovascular patient material is provided. Emphasis on special surgical disciplines such as thoracic surgery, urology, orthopedic surgery, neurology or plastic surgery can be arranged according to student interest.

**Surgical Ward Clerkship Elective, Mercy Hospital**—The student will be a clinical clerk, essentially carrying out the responsibilities of an intern and being on duty every third night. Together with a resident and a third year medical student, he will be responsible for a surgical service participating to the extent of his abilities in preoperative, operative and postoperative care. If desired, he will spend two to four hours a week in the dog laboratory carrying out the basic operations which demonstrate the physiology of the gastrointestinal tract. Variations in this program, according to a student's interest, can usually be arranged.

**Surgical Ward Clerkship Elective, Baltimore City Hospitals**—This is an externship in general surgery where the student serves as an extern on the general surgical wards. Vascular, thoracic, pediatric and transplantation surgery are all included in this experience since patients with these problems are cared for on the general surgery service. The extern will have responsibility for the pre and postoperative care of his patients and will participate in operative procedures. An opportunity is also afforded to work in the general surgery clinic as well as in specialty clinics in vascular, gastrointestinal and pediatric surgery and in the surgical tumor clinic.

**York (Pa.) Hospital Elective**—This elective presents an opportunity for private and/or service patient responsibility and assignment to a selected group of surgical patients with bedside teaching rounds, operating room experience as a primary assistant and a coordinated conference program offering general surgical and subspecialty conferences weekly. A minimum of one month is offered with coordinated outpatient experience.

**GSUR 542—U.S. Public Health Hospital Clinical Clerkship Elective**—This service has a diversified male and female population with general surgical problems including gynecologic, vascular and

thoracic. The majority of the admissions are elective and the volume of surgical trauma and emergency cases is relatively small. The student's work is supervised by the surgical resident staff under direction of the chief of the department.

**GSUR 543—Surgical Emergency Room Elective, Baltimore City Hospitals**—This course provides the student with an opportunity to serve as an extern in the emergency room. An extensive experience is available in major and minor trauma, minor surgery, acute abdominal problems, burns and both blunt and penetrating wounds of the thorax, abdomen and extremities. The student will be directly involved in the management of all surgical emergencies, any necessary surgical therapy and the subsequent post-operative care of the hospitalized patient.

**York (Pa.) Hospital Elective**—Presents an opportunity for involvement in an active emergency room setting with a wide range of trauma and with teaching provided by certified internists and surgeons, medical and surgical residents and a fulltime director of outpatient services. Offered for a minimum of one month.

**GSUR 545—Plastic and Reconstructive Surgery Elective, Baltimore City Hospitals**—The student will serve as an extern on the plastic surgical ward where he will receive extensive exposure to head and neck trauma and cancer, hand surgery, acute burn treatment and its rehabilitation. He will be provided an opportunity to participate in the congenital maxillofacial anomalies clinic at Children's Hospital once a week.

**York (Pa.) Hospital Elective**—This elective includes primary care responsibility for patients cared for on an active plastic surgery program, both private and service. It includes instruction in emergency room techniques, grafting procedures and other specialized plastic surgical procedures.

## GRADUATE AND POSTGRADUATE MEDICAL PROGRAM

This division, in conjunction with the Continuing Education and Postgraduate Committee of the medical school, offers the following program for graduate and postgraduate studies.

1. Fully accredited residencies at the University of Maryland Hospital and its affiliated hospitals, Maryland General and Mercy.

2. Research fellowships

3. Short refresher courses for practicing physicians

4. Brief inservice refresher courses

## RESIDENCY

The University of Maryland and affiliated hospitals program provides for graduate training experience with progressive graded responsibility for patient care and is approved by the Conference Committee on Graduate Surgical Training.

The general surgery core experience of the first and second years is designed to provide the trainee with a sound, fundamental training in general surgery in preparation for further training in the specialty of his choice, i.e. general surgery, thoracic and cardiovascular surgery, otolaryngology, neurological surgery, urology, and orthopedic surgery.

In general surgery sections of gastrointestinal, oncology, vascular and transplant surgery have been developed. Residents completing the general surgery program are offered junior faculty appointments at the assistant professor level for the purpose of enhancing their expertise in a selected area of surgery.

Basic and clinical research participation is encouraged, but not required. Residents are also encouraged to publish at least one article based on their research effort during their fourth year of training. Areas available for basic research include the Bressler Research Building and the basic science research building (John Eager Howard Hall) as well as the animal laboratory at Mercy Hospital.

Clinical research can be carried out at all of the clinical facilities.

## DIVISION OF NEUROLOGICAL SURGERY

### UNDERGRADUATE MEDICAL PROGRAM

#### First and Second Year

**Clinical Correlation in the Basic Sciences**—In the first year curriculum the staff participates from time to time by giving correlative lectures and demonstrations. The attending and resident staffs participate in the teaching of physical diagnosis of the nervous system in the second year.

#### Fourth Year

**NSUR 541—Clinical Neurosurgery Elective**—In the senior year, students may elect to participate in the full activities of the division. Cases will be assigned to each student and he will be required to observe diagnostic studies and, in most cases, will either scrub in or be in the operating room on cases to which he has been assigned. He will attend daily rounds with the housestaff and twice weekly rounds with one member of the visiting staff. He will also see patients in the emergency room with members of the housestaff. He will attend weekly conferences in neuropathology, clinical neurosurgery and diagnostic radiology. The duration of the course is four weeks.

**NSUR 542—Pediatric Neurosurgery Elective**—This is a preceptorship type of experience of



four weeks duration. The student will spend his daytime hours with a pediatric neurosurgeon. This experience will include both private office and hospital contact and the student may also participate in neurosurgical operations. Fulltime participation is required. This service is conducted only in the months of July, October, February and April. It is largely available to those particularly interested in the field of neurological surgery.

## GRADUATE STUDIES

A training program in neurological surgery is offered to graduates of accredited medical schools who have completed one year of surgical residency. The program is accredited by the American Board of Neurological Surgery and is of a five year duration.

The first year requires a six-month rotation through the Center for the Study of Trauma at University of Maryland Hospital. This unique experience is devoted to problems of management of the seriously, multiple-injured patient. A large number of patients are admitted to this unit for care and study. Many are brought by helicopter from all parts of the state. Since the majority of seriously-injured patients sustain head injuries, emphasis is placed on the effect of other injured organ systems on the central nervous system. Simultaneous monitoring of all physiological parameters, including intracranial pressure, allows more sophisticated assessment of these relationships and provides a physiological basis for optimal care. The second six months is devoted to laboratory work, including animal surgery, microsurgical techniques and participation in some form of experimental research.

The remaining four years is divided into three years of clinical neurosurgery, six months of neuropathology and six months of neurology. Neuropathology training is at University of Maryland Hospital. In the past, most residents have elected to take their neurology training at the National Hospital in London.

During the three years of clinical neurosurgery, the resident spends one and one-half years at University of Maryland Hospital as a junior resident and six months rotating through Mercy Hospital, an affiliate community hospital, where he assumes responsibility for patient care on the neurosurgical service. Responsibility for patient care and operating experience is progressive in these junior years.

The senior resident year is divided into two six month rotations. In one rotation the resident assumes responsibility for the elective neurosurgical service at University of Maryland Hospital, and in the other, he is responsible for the trauma service and serves as resident-consultant to the junior resident assigned to Mercy Hospital.

## DIVISION OF ORTHOPEDIC SURGERY

### UNDERGRADUATE MEDICAL PROGRAM

#### Third Year

OSUR 530—*Orthopedic Surgery, University of Maryland Hospital*—The course is specifically designed to teach the recognition and treatment of patients with acute fractures, including the severe multiple-injured patient, metabolic bone diseases, bone tumors, developmental and acquired deformities of the musculoskeletal system. The service is devoted largely to the care of adult patients with some access to children's orthopedic disease and pediatric trauma. Additional experience in this area can be obtained as a senior elective.

*Orthopedic Surgery, Baltimore City Hospitals*—Clinically-oriented courses in the principles and techniques of orthopedic surgery are offered at the Baltimore City Hospitals to a limited number of applicants. Activities include personal participation in diagnosis and management of a wide variety of musculoskeletal problems with special emphasis on fractures and joint injuries. Scheduled didactic experience include daily x-ray conference and rounds, special afternoon classes and weekly ward rounds. Clinical investigation may be correlated with ward work and scheduled responsibilities are adjusted individually. Additional experience can be taken as a senior elective.

#### Fourth Year

OSUR 541—*University of Maryland Hospital Elective*—The course is specifically designed to



teach the recognition and treatment of patients with acute fractures, including the severe multiple injured patient, metabolic bone diseases, bone tumors, developmental and acquired deformities of the musculoskeletal system. The service is devoted largely to the care of adult patients with some access to children's orthopedic disease and pediatric trauma.

*James Lawrence Kernan Hospital Elective*—This hospital is primarily a children's orthopedic hospital although there is a limited number of adult orthopedic beds. The hospital is extremely pleasant and in attractive surroundings. As it is essentially for elective orthopedics, there is no emergency work necessitating night call. In addition to the children's and adult reconstructive surgery, there is also some experience with major dental reconstruction and certain specialty clinics including scoliosis, meningomyelocele and amputations.

*St. Agnes Hospital Elective*—This is the community hospital affiliation in the orthopedic surgical program. Work at this hospital is largely the management of trauma although there is some adult reconstructive orthopedic work performed. The orthopedic service averages between 40 and 50 inpatients and these provide good background for the appreciation and management of acute trauma.

*York (Pa.) Hospital Elective*—Includes primary patient care responsibility on an active orthopedic surgical service with a wide range of specialized radiologic diagnostic procedures and orthopedic treatment of procedures—surgical and nonsurgical. Includes participation as primary surgical assistants plus preceptorship experience in a private office offered as additional elective. Offered for minimum of one month.

*Baltimore City Hospitals Elective*—The objective of this course is to increase the student's understanding of clinical orthopedic problems and treatment options in order to facilitate a career choice or to advance the student's capabilities within orthopedics or some related field. Activities include personal participation in diagnosis and management of a wide variety of musculoskeletal problems with special emphasis on fractures and joint injuries. Clinical responsibilities are adjusted individually. Scheduled didactic exercises include daily x-ray conferences and rounds, weekly grand rounds and special classes.

*Montebello State Hospital Elective*—This hospital offers a wide range of chronic diseases and the availability of material and records for clinical research is unequal in the state. This elective is for those students interested in pursuing some fundamental clinical problem related to rehabilitation.

## GRADUATE STUDIES

The Division of Orthopedic Surgery offers an accredited four-year residency program.

This balanced program is achieved through cooperation with St. Agnes, a community hospital, Montebello State, a rehabilitation hospital, and James Lawrence Kernan Hospital for Crippled Children. Approximately one half of the time is spent at University of Maryland Hospital and the remaining period shared between the other affiliated hospitals.

In addition to the regular orthopedic program which includes extensive experience in adult and children's orthopedics, rehabilitation medicine and spinal cord injuries, residents are assigned on a rotating basis to the Center for the Study of Trauma at University of Maryland Hospital, which is a highly sophisticated advanced care unit for the severely injured patient. Teaching of adult orthopedics and of trauma is achieved in bi-weekly grand rounds, didactic lectures and regularly scheduled seminars. Children's orthopedics is taught primarily at James Lawrence Kernan Hospital.

The basic science program includes a regular course in bone pathology in conjunction with Johns Hopkins University, anatomic dissections in conjunction with the Department of Anatomy, an audiovisual program in conjunction with the Academy of Orthopedic Surgery and special courses in prosthetics and orthotics.

Fulltime staff members and residents are engaged in both basic and applied research programs and new residents entering the program will be expected to participate in these endeavors. The residents are given ample opportunity to become effective teachers through participation in conferences and lectures.

Elective rotations at other orthopedic centers, both in the United States and abroad, are available in the fourth year of residency provided they are approved by the American Board of Orthopedic Surgery.

## DIVISION OF OTOLARYNGOLOGY

The Division of Otolaryngology provides an introduction to the diseases of the head and neck. A wealth of opportunity is provided to the student who will be concerned with communication disability and the clinical diseases where hearing, speech and language are of diagnostic significance by a staff with appropriate accreditation in this field.

The entire staff with the assistant of the post-doctoral trainees and residents, provide each student by example, lecture and direct tutorial instruction, the essentials with which to enter residency in such fields as family practice, pediatrics, general surgery, neurosurgery, neurology,



psychiatry and otolaryngology and with a knowledge of how to approach the study of specific head and neck diseases.

## UNDERGRADUATE MEDICAL PROGRAM

### *First and Second Year*

Introduction to the diseases of the head and neck is begun through interdepartmental arrangement with anatomy and physiology in the first year and with the Department of Medicine in the study of physical diagnosis in the second year.

### *Third Year*

OTOL 530—Third year students are individually instructed in the techniques of the examination of the ears, nose and throat. One hour of basic audiological technique is presented to each group by an audiologist and one hour of introductory speech pathology is presented by a speech pathologist. Fundamental elements of otolaryngologic diagnosis and therapy are stressed in this program of approximately ten days.

### *Fourth Year*

OTOL 541—*Basic Clinical Otolaryngology Elective*—This course provides intensive exposure to diseases of the ears (hearing and balance), nose, oral cavity, pharynx, larynx and neck. The emphasis will be on practical aspects of examination, diagnosis and treatment of disease in these areas. The major activity of this elective will be the outpatient clinic. Participation in inpatient surgery can be individually arranged for interested students. This course is a prerequisite for any other courses in otolaryngology.

OTOL 542—*Advanced Otolaryngology Elective*—This course is similar to basic clinical otolaryngology with students assuming more responsibility. An elective rotation is included at Maryland General Hospital. Duration of the course is four weeks.

OTOL 543—*Communication Disorders (Speech and Hearing) Elective*—Prerequisite, two week course in basic clinical otolaryngology. Two interrelated areas with emphasis on audiology as related to clinical problems of diagnosis and rehabilitation. The second area includes speech and language development and their disorders, developmental and acquired. An introduction to the theory and techniques of habilitation and rehabilitation of communication problems are presented.

OTOL 544—*Investigation in Otolaryngology Elective*—Prerequisite, two week course in basic clinical otolaryngology. This course presents an in depth exposure to clinical audiology and otology. Physiology, anatomy and pathology of the

hearing mechanism will be reviewed. Techniques and interpretation of the electronystagmography and cortical evoked audiometry will be covered. Otoneurologic will be presented concurrently with the student participating in correlated work in the temporal bone laboratory. This will include the preparation, dissection and examination by phase contrast and light microscopy of experimental animal and human temporal bones.

OTOL 545—*Physiology of Hearing Elective*—Provides a background for postdoctoral training in auditory function as well as provides a foundation for students interested in research in auditory function. The course is open to select students, residents in neurology, neurosurgery, otolaryngology, auditory physical and audiology.

OTOL 546—*Surgical Otolaryngology Elective*—Prerequisite, two week course in basic clinical otolaryngology. Each extern is given supervised opportunity to be responsible for pre and post-operative evaluation and care of patients on the otolaryngology service as well as participate in direct laryngoscopy, bronchoscopy and esophagoscopy procedures. Experimental otoneurologic diagnosis including electronystagmography and other techniques are available for those interested.

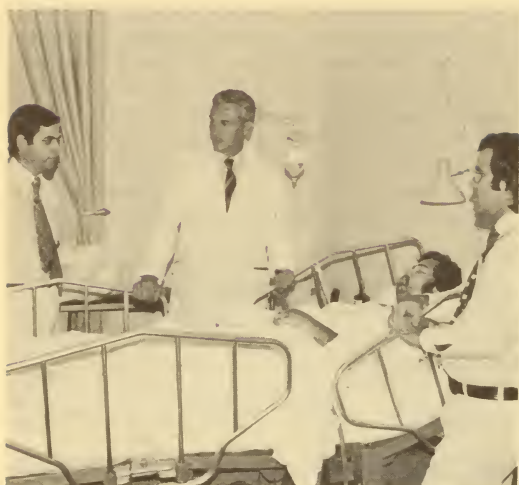
## GRADUATE AND POSTGRADUATE MEDICAL PROGRAM

Part of the integrated teaching program of the School of Medicine, resident training in otolaryngology is open to four residents in each of the four years of the American Board of Otolaryngology-approved program.

Two primary facilities, University of Maryland Hospital and Maryland General Hospital, supply patients treated by the service. There are over 700 admissions annually to the University of Maryland Hospital of which 15 per cent are private cases and an additional 7,000 outpatients annually are seen through an otolaryngology clinic. Maryland General, a 500-bed community hospital, has a 70-bed eye, ear, nose and throat wing which includes six operating rooms devoted exclusively to these patients. Both hospitals have a fulltime operating room available to the otolaryngology service.

Surgery performed by residents include head and neck surgery for cancer, temporal bone procedures ranging from mastoidectomy to stapedectomy, submucous resections, rhinoplasties, tonsillectomies, adenoidectomies, trauma, salivary glands, lesions, plastic procedures and sinus surgery.

The resident's first year is spent at University of Maryland Hospital and is divided between inpatient and outpatient care. During this time



the trainee is expected to complete the American Academy of Ophthalmology and Otolaryngology Home Study Course. In the second year, part of the rotation is at Maryland General Hospital and the resident assumes responsibility for selected surgery. In the final year, two residents remain at University of Maryland Hospital and two rotate at Maryland General. Some time may also be spent at the Fort Howard Veterans Hospital as well as in several community clinics.

## POSTGRADUATE

The division, in conjunction with the Committee on Continuing Medical Education, sponsors an annual "Otolaryngology Day" for family practitioners and other physicians in the area to indicate new trends in the care of patients with otolaryngology complaints.

## DIVISION OF THORACIC AND CARDIOVASCULAR SURGERY

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**TSUR 541—Externship in Thoracic Surgery Elective**—The division presents an elective program for senior students covering the basic aspects of thoracic and cardiovascular surgery. The basic purpose of the program is to present the basic pathophysiological principles of this highly specialized and demanding discipline in a clinical setting. The student becomes a member of one of the teams on the service and serves in the capacity of an intern. Opportunities are presented to assist in the care of a wide variety of thoracic and cardiovascular surgical patients. Additionally, the student is able to attend the various combined conferences held with the De-

partment of Medicine's divisions of pulmonary disease and cardiology. Assisting in the operating room and the endoscopy suite is encouraged. Duration of the course is four weeks with a maximum of 12 weeks available.

## GRADUATE STUDIES

Residents are given an opportunity to assist and then perform all types of cardi thoracic operative procedures, including cardiopulmonary bypass, in a program designed to ensure progressive experience.

The two-year program which admits three trainees each year is approved by the American Board of Thoracic Surgery. Applicants must be eligible for the American Board of Surgery examination at the start of the residency program.

Training is conducted at the University of Maryland Hospital and at Mount Wilson State Hospital for Pulmonary Disease. In depth clinical experience is offered in all aspects of thoracic and cardiovascular surgery, and a variety of conferences in basic and clinical science are presented in liaison with the Division of Pulmonary Disease, Cardiology and Gastroenterology, Department of Medicine, and with the Department of Pediatrics. An active research program is also under way.

A team approach is utilized on the two major services at University of Maryland Hospital. Each team is comprised of two fulltime staff members, a resident and an assistant resident in thoracic surgery and a rotating resident in general surgery. The thoracic resident is expected to administer the service and perform operative procedures of which he is capable within the dictates of adequate medical care. Presently each resident performs 85 major thoracic surgical procedures, assists on hundreds more and performs over 100 endoscopies.

The team at Mount Wilson State Hospital consists of staff physicians from the University of Maryland and the Johns Hopkins University, a resident and an assistant resident from the University of Maryland Hospital, and an assistant resident from the Johns Hopkins residency program. All aspects of pulmonary tuberculosis surgery are handled at the hospital by the resident staff. Not only are a large number of resections carried out, but numerous endoscopic procedures are performed. Additionally, time is spent in the pulmonary function laboratory and techniques such as bronchspirometry and bronchography are taught and expedited by the resident.

The experience provided easily meets the requirements of the American Board of Thoracic Surgery and graduates of this program are now practicing thoracic and cardiovascular surgery in all parts of the United States and in many foreign countries.



## DIVISION OF UROLOGY

The urologic curriculum is designed to introduce urologic principles as they relate to preservation of renal function, cause and cure of urinary tract infection, maintenance of a normal or acceptable voiding pattern and disorders of the male reproductive system. Included are the useful clinical tests for renal function, the diagnosis of renovascular hypertension, radiographic procedures for evaluating renal masses and obstructive uropathy, etiology and management of urinary tract anomalies, neurologic bladder dysfunction, neoplasms and causes of male infertility.

The students are instructed by helping in the care of patients, through seminars focused on daily patient presentation by the students, by answering a group of study questions which are later reviewed and discussed with the entire group, by attending daily rounds and conferences in the division and by a minimum number of lectures.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

Lectures and demonstrations on disorders of urine transport are given in conjunction with the Division of Nephrology and the Department of Pathology during two weeks of instruction on the renal system.

### *Third Year*

**USUR 530—Junior Clerkship**—Five to seven students are assigned to the division for ten days at the University of Maryland Hospital. Each is asked to review and follow a patient with a different urologic problem and to present this patient to the group and a faculty member. Daily rounds and conferences are held. The students observe and participate in diagnostic and operative procedures and attend the outpatient clinic every afternoon. A morning is spent reviewing study questions near the end of the ten days. The group is met by the nephrologists two mornings per week.

### *Fourth Year*

**USUR 541—Externship in Urology Elective, University of Maryland, Mercy and York hospitals**—In order to learn urologic principles and recognition of urologic disease as related to general medical practice, each senior who elects urology will participate in the care of patients, assist in operations and perform diagnostic procedures. The student will participate also in daily rounds and conferences including pathology, basic science, nephrology, radiology and weekly grand rounds.

*Externship in Urology Elective, Baltimore City Hospitals*—The course is designed to teach urologic principles; the selected topics are: (1) obstructive uropathy; (2) genitourinary tumors; (3) congenital malformations; (4) urinary tract infections, and (5) urolithiasis. The exposure could be broadened by actual ward experience which could be arranged on an individual basis.

## GRADUATE STUDIES

The residency program consists of three years of training following a year as an assistant resident in surgery. Each year three men are appointed and at the end of the third year become co-residents if progress in training has been satisfactory.

Third year residents spend four months in charge of urology ward service and ward consultations at University of Maryland Hospital, four months at Veterans Administration Hospital at Ft. Howard, which has 30 beds for urology, and four months at Mercy Hospital, which has eight beds for urology. Additional services in urology are performed at the Montebello State Rehabilitation Hospital and the Mount Wilson Tuberculosis Hospital.

The six assistant residents rotate through the ward service, outpatient department, private service, Mercy Hospital and the V.A. Hospital. Their responsibilities include assisting at operations and supervising the care of private patients, assisting in the teaching of both third and fourth year students, performing some surgical procedures under supervision of a resident, supervising care of ward patients and managing urologic outpatients.

This program begins on July 1 of each year.







## MEDICAL TECHNOLOGY

The University of Maryland program in medical technology is four years in duration, leading to a Bachelor of Science degree. The first three years are devoted to basic studies at the College Park campus, the Baltimore County campus, or other approved colleges. The last year is spent in clinical studies at the School of Medicine and University of Maryland Hospital.

This program is administered by the School of Medicine. The curriculum in medical technology complies with the requirements and recommendations of the Board of Schools of the American Society of Clinical Pathologists and the American Medical Association Council on Medical Education. Graduates of the program will be eligible to take the examination for certification given by the Board of Registry of the American Society of Clinical Pathologists.

## ADMISSION

Applicants must meet the admission requirements of the University of Maryland. At least three years of college-preparatory mathematics and at least three years of science, including chemistry and physics, are strongly recommended.

## CURRICULUM

Students must complete 90 semester hours or more in academic subjects before being admitted to the senior year. Health and physical education do not count toward this 90 semester hour total. The following courses are intended as a guide for the student in planning a curriculum which will meet both the University of Maryland requirements for graduation and the special requirements for the Registry examination administered by the American Society of Clinical Pathologists' Board of Schools.

Near the completion of the preprofessional requirements, the student submits an application to the Baltimore campus. If the student is accepted, he or she will spend a full 12-month residency where he or she rotates among all the laboratory services and receives technical instruction in hematology, serology, clinical chemistry, pathogenic microbiology and disciplines that are included in laboratory medicine.

The following courses are required by the University of Maryland School of Medical Technology and comply to the standards set by the AMA-ASCP school.

*Science and Mathematics**Chemistry Total—16 hours*

Inorganic	4 hours
Organic	4 hours
	8 hours

An additional 8 hours is required from the following courses:

Physical and Analytical Chemistry	5 hours
Quantative Analysis	4 hours
Biochemistry	5 hours

*Biological Science Total—16 hours*

General Zoology	4 hours
General Microbiology	4 hours

An additional 8 hours is required from the following courses:

Anatomy and Physiology	8 hours
Genetics	4 hours
Comparative Vertebrate Morphology	4 hours
Cellular Biology	4 hours
Pathogenic Microbiology	4 hours

*Mathematics Total—6 hours*

Introduction to Mathematics	6 hours
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*Recommended Electives*

Principles of Biochemistry
Radiochemical Safety Procedures
Biochemistry
Parasitology
Animal Histology
Immunology
General Virology
General Physics
Statistical Methods in Psychology

*General University Requirements*

*Area A* Life Sciences and Agriculture, Mathematical, Physical and Engineering Sciences

Not required for Medical Technology Students

*Area B* Behavior and Social Sciences—Human and Community Resources

6 hours minimum

Any 6 hours from the listed divisional courses

*Area C* Arts and Humanities

12 hours total

Speech 100 3 hours Required

An additional 9 hours from any of the



courses listed under the Division of Arts and Humanities

*English Composition—Required*

Students will be required to either show proficiency for English Composition (SAT or Illinois Rhetoric Exam) or take ENG 101—Composition

## UNDERGRADUATE MEDICAL PROGRAM

*Fourth Year*

MEDT 350—*Clinical Chemistry (4)*—An intensive study of the qualitative and quantitative principles and procedures involved in the clinical chemistry laboratory is undertaken. The significance of chemical reactions in these diagnostic procedures and their relationship to the disease processes of man are studied, as well as the interpretations, accuracy and limitations of these tests. Lectures are presented with simulated laboratory experience in this area.

MEDT 355—*Nuclear Medicine (1)*—This course introduces the use of radioisotope tracers in diagnostic medicine. The means of radiation safety and radioisotope therapy are discussed. Various tests are studied including those of thyroid function, blood volume, intestinal function and organ scanning. Lectures are presented with laboratory work in this area.

MEDT 360—*Hematology I (3)*—The principles of hematopoiesis are presented along with laboratory studies of the techniques used in studying human blood cells; this includes a study of the pathological abnormalities associated with the hematopoietic system. This course also involves a study of the mechanisms of coagulation and its application in pathological processes. Lectures are presented with laboratory work in this area.



MEDT 361—*Hematology II (2)*—A continuation of the principles and laboratory procedures presented in Hematology I.

MEDT 365—*Immunohematology (3)*—The dynamics and clinical manifestations of the blood group systems, their antigens and antibodies, are presented. A study of blood banking including donor processing and the techniques of determining compatibility is undertaken with special interest on sophisticated problems arising in the blood bank. Lectures are presented with laboratory work in this area.

MEDT 370—*Microbiology (4)*—The fundamentals of pathogenic organisms are presented in this course. Emphasis on the isolation and identification of bacteria by morphological and cultural procedures is made. The study of mycological and parasitic diseases in man and laboratory techniques for their identification is also included. Lectures are presented with simulated laboratory experience in this area.

MEDT 375—*Serology and Clinical Microscopy (2)*—The first half of this course presents a detailed study of the principles of immunology and virology and the serological diagnostic tests of the laboratory. The second half of the course is devoted to a study of renal physiology and a correlation of the laboratory findings of clinical microscopy with pathological processes.

MEDT 380—*Electronics, Instrumentation and Statistical Tools (2)*—This course acquaints the student with the basic principles of electronics and their application to all types of laboratory instrumentation. The significance of statistics, population testing and quality control are also covered.

MEDT 385—*Histology (2)*—The study of normal and pathological tissue is presented along with the histological and chemical methods for tissue identification. Special staining techniques and selected histological cases are studied. Lectures are presented with laboratory work in this area.

MEDT 390—*Clinical Practice (8)*—Rotation through the clinical laboratories with instruction and examinations in each area.

MEDT 391—*Clinical Practice (8)*—Rotation through the clinical laboratories with instruction and examinations in each area.

MEDT 392—*Clinical Practice (3)*—Rotation through the clinical laboratories with instruction and examinations in each area.

MEDT 395—*Medical Technology Seminar (1)*—The role of today's medical technologists is discussed in relation to the changing medical world. Problems in laboratory management, administration and research techniques are presented. At the end of this course each student must submit a scientific research paper on a subject of his choice related to clinical pathology.



## FACULTY

### Associate Professor

Masters, Jason M., program director; BS, High Point College, 1951; MS, Sul Ross State, 1956; PhD, University of Maryland, 1965.

Russell, Lynn L., BS, MT (ASCP), Springfield College, 1966.

### Assistant Professor

Cartwright, Willie Q., BS, MT (ASCP), Howard University, 1959; MS, State University of New York at Buffalo, 1971.

Knoblock, Edward C., AB, Western State College of Colorado, 1942; MS, University of Maryland, 1959.

Libonati, Joseph P., BS, St. Joseph's College, 1963; MS, Duquesne University, 1965; PhD, University of Maryland, 1968.

### Instructor

Bergeron, Jon D., BS, University of Maryland, 1966; MA, Towson State, 1972; MS, 1973.

Billings, David A., BS, MT (ASCP), University of Maryland, 1972.

Eng, Joyce F., BS, MT (ASCP), Fairleigh Dickinson University, 1969; MS, Long Island University, 1972.

Fox, Timothy, BS, University of Maryland, 1966; MT (ASCP), O.B. Hunter School of Medical Technology, 1967.

Gonzalez, Karen M., BS, MT (ASCP), University of Maryland, 1971.

Silver, Sylvia, BA, MT (ASCP), Drake University, 1965.

Members of the Department of Pathology faculty present several lectures in all disciplines of medical technology during the last year of the curriculum. Instruction during the clinical rotation phase of the student's training is the responsibility of the clinical laboratory staff at University of Maryland Hospital.





## PHYSICAL THERAPY

The Department of Physical Therapy of the School of Medicine administers a four-year curriculum leading to a Bachelor of Science degree. The department, located in the Allied Health Professions Building, 32 South Greene St., Baltimore, Md. 21201, is accredited by the Middle States Association of Colleges and Secondary Schools and approved by the Council on Medical Education, American Medical Association in collaboration with the American Physical Therapy Association. Freshmen and sophomore students are registered on the College Park or Baltimore County campus and the junior and senior students on the Baltimore City campus. Students may attend other accredited colleges and transfer into the program at any level up to the junior year.

Attendance at the University of Maryland as a freshman or sophomore student does not guarantee admission to the junior year of the professional program at the Baltimore City campus. The minimal academic requirement for admission at the junior level is the completion of 69 semester hour credits; 63 in arts and science courses comparable to those of the freshman-sophomore years at the University of Maryland; 2 in health; 2 in physical therapy orientation, and 2 in physical education. Elective hours may be substituted for health and

orientation if these courses were not available at a college previously attended. Physical education may be waived if it was not available at a college previously attended. Courses with "D" grades are not accepted in transfer. Courses taken by correspondence are not accepted and science courses (zoology, chemistry and physics) must include a laboratory.

The description of selected courses offered on the College Park campus of the University of Maryland should be used as a guide for obtaining comparable courses. To determine whether the courses taken or planned will satisfy the requirements for transfer credit, students should:

- Obtain descriptions of specific courses from your college catalog.

- Compare these descriptions with the University of Maryland course descriptions as to subject matter, content and semester hour credits. The ratio for converting quarter hours to semester hours is 3:2 (three quarter hours are equal to two semester hours).

If course descriptions indicate that courses being compared have the same content and equal credits, then courses in question may be expected to fulfill the University of Maryland requirements. An "Evaluation of Credit" check list may be obtained by writing to the



department. If, after having tried, students are unable to make these evaluations they may seek advice by:

—Sending an unofficial college transcript; completing and returning the "Evaluation of Credit" check list—noting courses completed, those for which you are currently registered or plan to register, and

—Submitting xerox copies of descriptions of courses from the catalog(s) of the college(s) you have attended. If a specific course is in doubt, include a complete description of that course and any other related courses which may be used in substitution.

Students who have attended college outside the United States are advised to direct questions regarding evaluation of transfer credit to: Director of International Foreign Student Affairs, University of Maryland, College Park, Md. 20740.

Anyone meeting the prerequisites is eligible to be considered for admission. There are no exclusions based on sex, age, ethnic background or prior completion of an academic degree in some other program.

## APPLICATION TO JUNIOR YEAR

A student who can realistically meet the academic requirements and wishes to be considered a candidate for the junior class beginning in August should apply in January of the preceding year.

Request for application should be submitted to:

The Office of Admission and Registration

University of Maryland

Room 132 Howard Hall

660 W. Redwood St.

Baltimore, Md. 21201

The application and all supporting documents should be completed and sent in by the first of March. Deliberations begin late in March or early April and are based upon academic ability as well as other criteria.

If it is determined that a student can meet all prerequisites he will be advised about the middle of April of further procedure, including the completion of a questionnaire and having an interview.

Some financial assistance based on need is available to junior and senior students. Information regarding this, housing, advanced professional standing and equivalency and proficiency tests can be sought after application has been made.

## TUITION AND FEES

Tuition—Residents of Maryland	\$250.00
Tuition—Non-Residents	475.00
Auxiliary Fee	27.50
Laboratory Fee (Juniors)	5.00
Laboratory Fee (Seniors)	2.50
Student Activities Fee	7.50
Student Health Fee	5.00
Hospital Insurance (Blue Cross)	
Individual	46.80
Two Persons	100.08
Family	124.80
Dormitory Fee	225.00
Graduation Fee	15.00

## CLINICAL AFFILIATIONS

Clinical education is an essential part of the total physical therapy program offered at the University of Maryland. Approximately 50 centers are available for experience in acute-general, chronic-rehabilitation, pediatric and community health settings.



Three six-week sessions of fulltime experience are provided in addition to parttime clinics during the junior year. The first fulltime clinic is scheduled during the summer between the junior and senior years and the others are scheduled during the second semester of the senior year.

The student should plan his finances accordingly since he will have only a six-week summer vacation between his junior and senior year. Junior students also have an additional vacation during the month of January.

## CURRICULUM

The courses listed below are prerequisite to transferring as a junior student to the Department of Physical Therapy on the Baltimore City campus.

	<i>Semester Credit Hours</i>
Zoology or Biology with laboratory, ZOOL 101, 102 (courses with botany unacceptable)	8
College Chemistry, CHEM 103, 104 (general inorganic chemistry with laboratory)	8
Fundamentals of Physics, PHYS 121, 122 (with laboratory)	8
Introduction to Mathematics, MATH 110, 111 (must include algebra and trigonometry)	6
English Composition—3 hours, ENGL 101 or 171 English Literature—6 hours of your choice	9
Speech, SPCH 100 (public speaking)	3
Sociology, SOCY 100 (introduction)	3
Psychology—3 hours, PSYC 100 (introduction) Psychology—6 hours of your choice	9
History (your choice except state)	6
Philosophy, PHIL 100 (introduction) or Fine Arts (any course other than applied)	3
Arts and Science	63
*Physical Therapy Orientation, BTPT 110, 111	2
*Health, HLTH 105	2
**Physical Education, PHED	2
	69

\* Elective hours may be substituted if these courses were not available at previously attended college.

\*\* These hours may be waived if physical education was not available at previously attended college.

For course descriptions refer to the University of Maryland Consolidated Undergraduate Catalog.

### *Junior Year*

	<i>Semester Hour Credits</i>	
	<i>First</i>	<i>Second</i>
MANA 301, 302—Human Anatomy	5	5
MEDC 301, 302—Clinical Medicine I, II	2	2
PATH 301—Pathology	—	3
MPHY 301—Human Physiology	4	—
BTPT 301, 302—P.T. Theory and Practice I, II	3	2
BTPT 303—Rehabilitation I	—	1
BTPT 304—Nursing Procedures Related to Physical Therapy	1	—
BTPT 305—Professional Orientation & Ethics	1	—
BTPT 306—Therapeutic Exercise I	—	2
BTPT 310, 311—Clinical Education I, II	1	1
Total Hours	17	16

### *Summer (6 weeks)*

BTPT 312—Clinical Education III	4
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### *Senior Year*

MANA 351—Biomechanics & Kinesiology	3	—
MEDC 351, 352—Clinical Medicine III, IV	3	1
MPHY 351—Applied Physiology	—	2
BTPT 351—Evaluation Procedures	2	—
BTPT 353—Therapeutic Exercise II	3	—
BTPT 354—Rehabilitation II	2	—
BTPT 355—P.T. Theory and Practice III	3	—
BTPT 356—Public and Community Health	—	2
BTPT 360—Biostatistics and Research	—	3
BTPT 362—Current Literature	—	1
BTPT 364—Administration	—	1
BTPT 365, 366—Clinical Education IV, V	1	6
Total Hours	17	16

## UNDERGRADUATE MEDICAL PROGRAM

**BTPT 110, 111—Physical Therapy Orientation (1-1)**—General introductory course to the profession of physical therapy and the relationship to other health professions. Orientation of the student is by visual aids, discussion and visits to physical therapy departments.

**MANA 301, 302—Human Anatomy (5-5)**—Prerequisites, eight hours of zoology. The student is given an opportunity to develop a basic concept of the morphology of the human body through a correlation of histology, gross anatomy and neuroanatomy. Dissection of the human body, on a regional basis, including the brain is required. Three hours of lecture and six hours of laboratory a week.

**MEDC 301—Clinical Medicine I (2)**—Prerequisites, nine hours of psychology. Lectures in psychiatry with special emphasis on psychosomatic disorders, personal and social factors affecting the handicapped and patient-therapist interactions. Lectures in dermatology including the anatomy and function of the skin, symptomatology and treatment of skin diseases.

**MEDC 302—Clinical Medicine II (2)**—Prerequisite, MPHY 301. Continuation of MEDC 301 with lectures in medicine to include symptoms and treatment of patients with involvement of the pulmonary, cardiovascular, genitourinary, gastrointestinal, endocrine and reproductive systems.

**PATH 301—Pathology (3)**—Prerequisites, MANA 301 and MPHY 301. This course includes the study of the basic principles of disease and injury with their application to the various systems of the body. An autopsy and pathological specimen are observed.

**MPHY 301—Human Physiology (4)**—Prerequisites, eight hours each of chemistry and zoology. The lectures cover the major fields of physiology including the following areas: central and peripheral nervous systems, neuromuscular apparatus, heart and circulation, respiration, kidney and body fluids, gastrointestinal tract, endocrines and reproduction. Three hours of lecture, three hours of laboratory and one hour conference a week.

**BTPT 301—Physical Therapy Theory and Practice I (3)**—Manipulative procedures: Students are taught to investigate by means of palpation of topographical anatomy those areas responsible for restricting range of motion or inhibiting functional activity and to apply appropriate manipulative soft-tissue techniques to reduce pain, release contractures of muscles and scar tissue adhesions. The theory and physiological effects are discussed. One hour lecture and two hours of laboratory a week.

**Hydrotherapy:** The physics of water and the principles of thermometry are reviewed. The physiological effects of local and general application of heat and cold on the human are studied both didactically and in the laboratory. Procedures which are taught include application of hot and cold packs, whirlpool, Hubbard tank, moist air and paraffin as well as principles and methods of underwater exercise. The therapeutic indications and limits of each of these procedures are stressed. One hour of lecture and two hours of laboratory or clinical practice a week.

**BTPT 302—Physical Therapy Theory and Practice II (2)**—Prerequisite, eight hours of physics. This course includes lectures and practice in the administration of infrared, ultraviolet, diathermy, microthermy and ultrasonics. The physics and physiological effects are reviewed thereby enhancing the student's ability to make judgment in the therapeutic application of the procedures. Two hours of lecture and two hours of laboratory or clinical practice a week.

**BTPT 303—Rehabilitation I (1)**—A study of the basic philosophy underlying comprehensive care of the physically handicapped, its principles and practices. The essential role of the physical therapist in the total treatment program is stressed. An introduction to functional training, ambulation and the application of assistive and supportive devices is included. One hour of lecture and one hour of laboratory or clinical practice a week.

**BTPT 304—Nursing Procedures Related to Physical Therapy (1)**—This course, taught by a nurse and a physical therapist, is designed to cover the cooperative relationship between the two professions in patient care to include supportive and aseptic bandaging, isolation procedures, oxygen therapy, cardiopulmonary resuscitation, drainage, first aid and vital signs. One hour lecture and one hour of laboratory or clinical observation a week.





**BTPT 305—Professional Orientation and Ethics (1)**—A broad interpretation of the qualifications of a profession and a base introduction to ethics is presented. The history and development of physical therapy as a profession is reviewed. Particular emphasis is placed on the student's understanding of and development of professional and ethical behavior.

**BTPT 306—Therapeutic Exercise I (2)**—This course covers the history and scope of therapeutic exercise, patterns of movement and posture (normal and abnormal) and a study of developmental and physiological principles of purposeful graded exercises for the prevention and treatment of physical disabilities. One hour lecture and three hours of laboratory or clinical practice a week.

**BTPT 310, 311—Clinical Education I, II (1-1)**—Clinical observation and experience in patient care with opportunity to utilize procedures being learned concurrently in other courses. One half-day per week and one full day per week during the first and second semesters respectively.

**BTPT 312—Clinical Education III (4)**—A continuation of BTPT 311. The student applies the knowledge and skills learned during his first year to the management of patients in a fulltime clinical setting. Thirty-five to forty hours per week for six weeks during the summer between the junior and senior years.

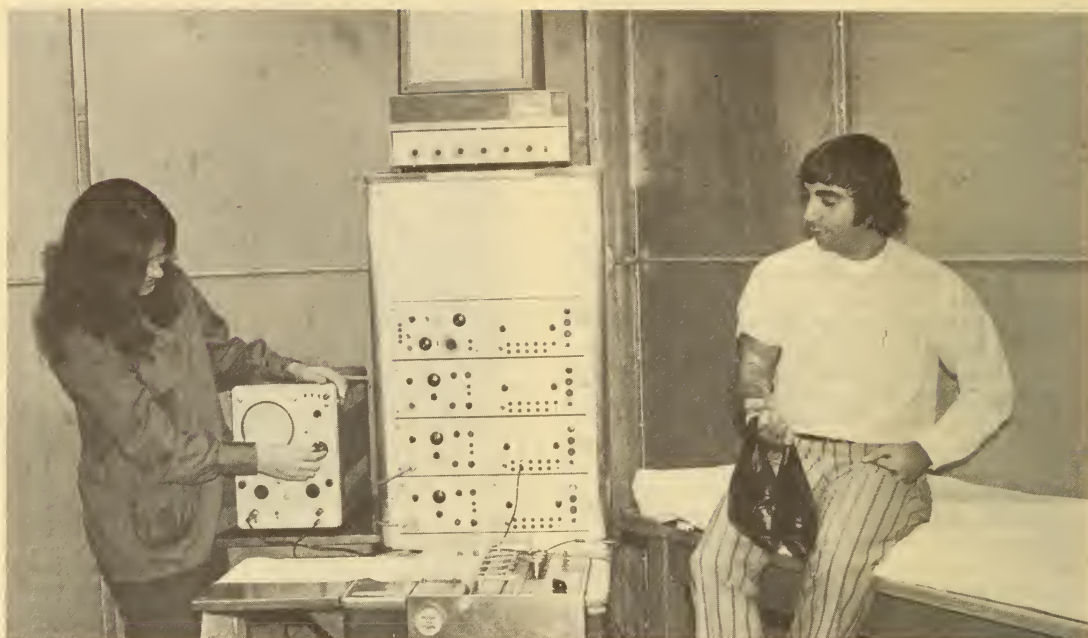
**MANA 351—Biomechanics and Kinesiology (3)**—Prerequisites, eight hours of physics, MANA 301 and 302. A detailed study of motion in the human body with emphasis on its mechanical and functional aspects. It is designed to include observation and analysis of movement as it occurs in man under both normal and pathological conditions. Two hours of lecture and four hours of laboratory a week.

**MEDC 351, 352—Clinical Medicine III, IV (3-1)**—A continuation of MEDC 302 with lectures in each of the specialties—surgery, pediatrics, neurology and orthopedics. The symptoms and treatment of patients with conditions most frequently referred to the physical therapist are stressed.

**MPHY 351—Applied Physiology (2)**—Prerequisite, MPHY 301. A study of physiology as it applies to exercise and its effects on the various systems, especially the cardiopulmonary and neuromuscular, in normal and pathological conditions. One hour of lecture and two hours of laboratory a week.

**BTPT 351—Evaluation Procedures (2)**—The principles, techniques and interpretation of those testing procedures within the scope of the physical therapist are taught by discussion and practice with normal and abnormal individuals.





These evaluations include manual and functional muscle tests; goniometric girth and length measurements; postural analyses and tests of endurance and coordination and sensory acuity. One hour of lecture and three hours of laboratory or clinical practice a week.

**BTPT 353—*Therapeutic Exercise II (3)***—The course, in continuation of BTPT 306, is designed to help the student develop skill in the correlation and application of the neurophysiological principles involved in the prevention and treatment of physical disabilities as well as to develop skills in planning, teaching and writing programs of exercise. Two hours lecture and four hours of laboratory or clinical practice a week.

**BTPT 354—*Rehabilitation II (2)***—A continuation of BTPT 303. Special emphasis is placed on the management of the lower extremity amputee and the patient requiring the use of orthotic devices. An introduction to normal and abnormal gait and prosthetic and orthotic devices. Two hours of lecture/laboratory or one hour of lecture and three hours of clinic each week.

**BTPT 355—*Physical Therapy Theory and Practice III (3)***—This course includes the physics and the physiological effects of low frequency alternating and direct currents as applied percutaneously for therapeutic and diagnostic use. Electromyography and nerve conduction time are included. Two hours of lecture and four hours of laboratory or clinical practice a week.

**BTPT 356—*Public and Community Health (2)***—The principles and methods of public health

including use of public health statistics, epidemiology, environmental health, community health organization and community health planning based on chronic disease epidemiology are studied. The student has the opportunity to study other health related professions as well as social and health agencies to make him better able to contribute to comprehensive health care. Four hours of lecture a week for eight weeks. Third quarter.

**BTPT 360—*Biostatistics and Research (3)***—Prerequisite, six hours of mathematics. A course designed to acquaint the student with the need for research in clinical physical therapy with an introduction to research design, mathematical tools and instrumentation. Each student will be expected to participate in a research project during the last semester. One hour of lecture and five hours of laboratory for eight weeks. Third quarter.

**BTPT 362—*Current Literature (1)***—A course designed to assist the student in evaluating and abstracting current scientific literature in a selected area. Oral, visual and written communications are used for presentation. Two hours a week for eight weeks. Third quarter.

**BTPT 364—*Administration (1)***—Students are given an opportunity to become acquainted with administration and supervision as it applies to the physical therapist. Human (interpersonal relations), intellectual (laws, methods and principles) and material factors (buildings, grounds and equipment) are discussed. Students are given an opportunity to practice written and oral



communications, analyze and describe the duties of a physical therapist, write policies for a department and plan a physical therapy department. Two hours a week for eight weeks. Third quarter.

BTPT 365, 366—*Clinical Education IV, V (1-6)*—A continuation of BTPT 312. The student is given increased responsibility for evaluation of patients and for planning and execution of treatment programs. Administrative skills and multi-disciplinary management are also developed. Thirty-five to forty hours per week for six-week sessions at two different centers, January-March.



## FACULTY

### Associate Professor

Hardiman, Clarence W., chairman; BS, University of Florida, 1949; CPT, Duke University, 1950; MS, Florida State University, 1954; PhD, 1964.

Latimer, Ruth M., BS, University of Richmond, 1945; CPT, U.S. Army Hospital, 1946; MS Medical College of Virginia, 1952.

### Assistant Professor

Doser, Nancy Lou, BS, Longwood College, Virginia, 1953; CPT, University of Southern California, 1959; MS, Northern Illinois University, 1963; PhD, University of Maryland, 1971.

Reid, Marlene, BS, CPT, University of Michigan, 1966; MS, 1969.

### Instructors

Bodine, Margaret, BS, Arizona State University, 1966.

Last, Rose, BA, Hunter College, 1957; CPT, Columbia University, 1958; MS, San Fernando Valley State College, 1971.

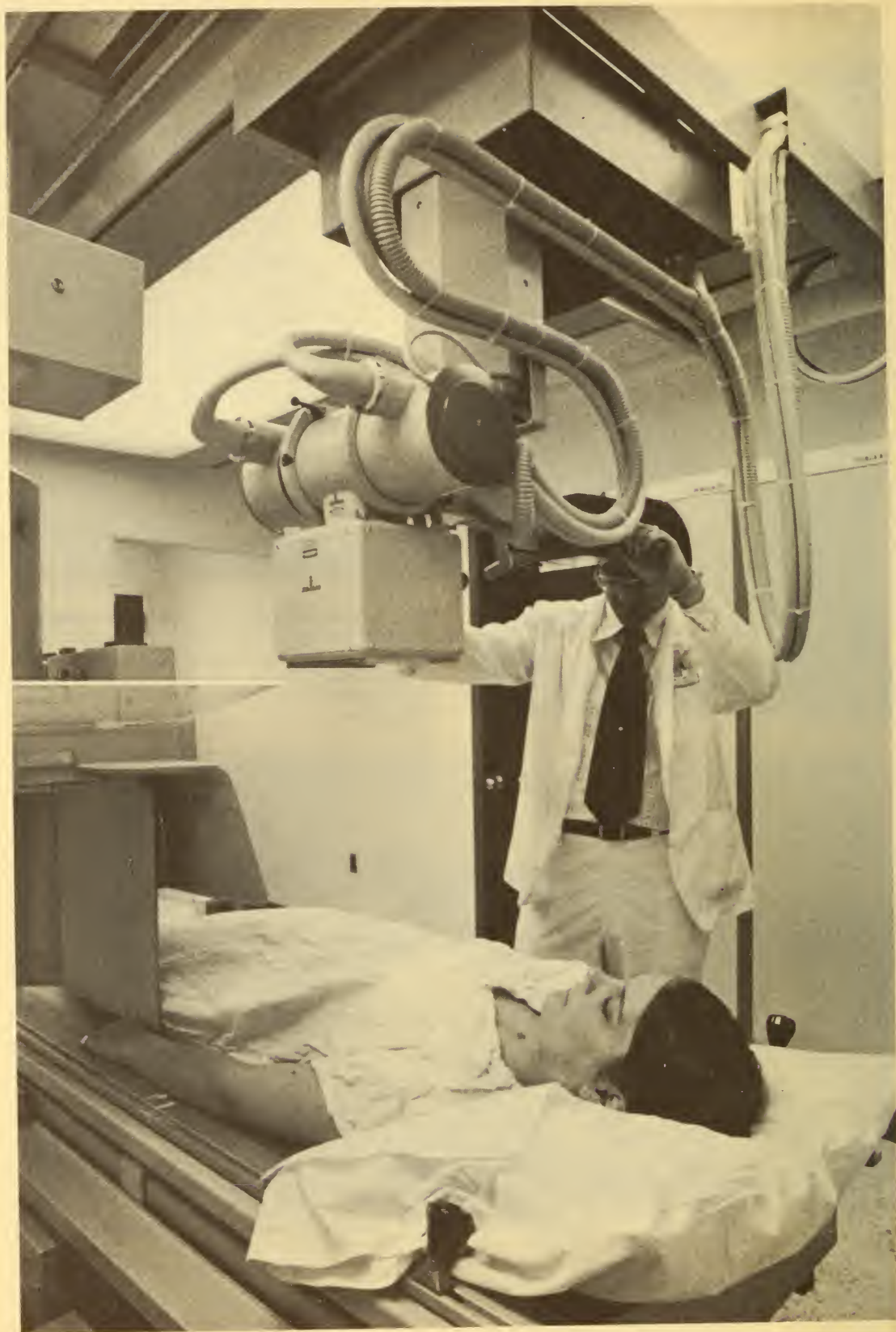
Novell, Joan, BS, University of Connecticut, 1955.\*

Ude, Robert H., BS, University of Missouri, 1966.\*

Violand, Richard L., Jr., BS, Ohio State University, 1968.

\* part time







## RADIOLOGIC TECHNOLOGY

The four-year program in radiologic technology at the University of Maryland leads to a Bachelor of Science degree and is under the School of Medicine. The curriculum complies with the requirements and recommendations of the American Registry of Radiologic Technologists, the Committee on Technologists Training of the American College of Radiology and the American Medical Association's Council on Medical Education. Graduates of the program will be eligible to take the examination for certification given by the American Registry of Radiologic Technologists.

Freshmen and sophomore students are registered on the College Park or Baltimore County campuses. However, students may attend other accredited colleges and transfer into the program at any level up to the junior year. Junior students register on the Baltimore City campus and senior students register at both the Baltimore County and Baltimore City campuses. Attendance at the University of Maryland as a freshman or sophomore student does not guarantee admission to the junior year of the professional program at the Baltimore City campus.

### ADMISSION

Students may apply for advancement/admission to the radiologic technology

program after three semesters of pre-professional work with a cumulative grade-point-average of 2.0. Applications will be received between September 1 and June 30 each year. A personal interview may be required with a member of the Admissions Committee of the Department of Radiology's Division of Radiologic Technology.

These students who are enrolled in a preprofessional curriculum at a non-University of Maryland campus will be required to have their courses evaluated by the Admissions Office of the Baltimore campus to determine transferability. Deficiencies must be corrected before admission to the program.

An individual, advanced or admitted to the radiologic technology program, who is registered by the American Registry of Radiologic Technology (ARRT) must also meet the same admission/advancement criteria as non-registered individuals. Some credit may be awarded for approved training. Registered technologists should request additional information.

### APPLICATION TO JUNIOR YEAR

A student who can realistically meet the academic requirements and wishes to be considered a candidate for the junior class beginning in the fall semester



should apply in January of the preceding year. Requests for application should be submitted to:

The Office of Admissions and Registrations  
University of Maryland  
Room 132, Howard Hall  
660 W. Redwood Street  
Baltimore, Md. 21201

The application and all supporting documents should be completed and sent by the first of March. Deliberations begin late in March or in early April and are based upon academic ability, as well as other criteria.

If it is determined that a student can meet all prerequisites, he will be advised about the middle of April of further procedure including the completion of a questionnaire and having an interview.

## REQUIRED PREPROFESSIONAL COURSES

<i>Course</i>	<i>Credit Hours</i>
English	9
Physics	8
Chemistry	8
Biology	8
Speech	3
Math	3
Psychology	3
Sociology	3
Physical Activities	2 (semesters)
Fine arts or Philosophy	3
Electives	12
	<u>60 total</u>

A 2.0 cumulative grade point average in lower division studies is required to advance to the radiologic technology program. It is advisable that the student consult with an advisor within the program as early as possible to choose the proper sequence of electives.



## FACULTY

### *Professor*

Dennis, John M., chairman, Department of Radiology; BS, University of Maryland, 1943; MD, 1945.

### *Assistant Professor*

Kusakull, Anant, BS, Chulalongkorn University, Thailand, 1954; MD, Siriraj Hospital School of Medicine, Thailand, 1957.

Whipfelder, Rose M., SB (physics), Massachusetts Institute of Technology, 1965; SM (hygiene), Harvard School of Public Health, 1970.



## REQUIRED PROFESSIONAL COURSES

<i>Course Number</i>	<i>Title</i>	<i>Credit Hours</i>
MDRT 300	Introduction to Radiologic Technology	2
MDRT 311	Physics of Diagnostic Radiology	3
MDRT 312	Fundamentals of Radiographic Technology	3
MDRT 313	Radiologic Anatomy and Physiology	3
MDRT 314	Radiographic Procedures I	4
MDRT 315	Clinical Practicum I	2
MDRT 330	Radiobiology and Protection	2
MDRT 333	Pathology	3
MDRT 334	Radiographic Procedures II	3
MDRT 335	Clinical Practicum II	2
MDRT 336	Departmental Organization and Administration	2
MDRT 340	Introduction to Radiotherapy and Nuclear Medicine	2
MDRT 345	Clinical Practicum III	1
MDRT 364	Specialized Radiographic Procedures	3
MDRT 365	Clinical Practicum IV	2
MDRT 375	Clinical Practicum V	2
MDRT 385	Practicum in Department Administration	2
MDRT 387	Methods of Teaching in Radiologic Technology	2
MDRT 388	Seminor in Radiologic Technology	1
MDRT 389	Senior Thesis	2

## CURRICULUM

### *Junior Year*

<i>Fall Course</i>	<i>Credits</i>
MDRT 311 Physics of Diagnostic Radiology	3
MDRT 313 Radiologic Anatomy and Physiology	3
MDRT 312 Fundamentals of Radiologic Technology	3
MDRT 314 Radiographic Procedures I	4
MDRT 315 Clinical Practicum I	2
MDRT 300 Introduction to Radiologic Technology	2
	<hr/> 17

### *Spring Course*

Spring Course		Credits
MDRT 334	Radiographic Procedures II	3
MDRT 333	Pathology	3
MDRT 330	Radiobiology and Protection	2
MDRT 336	Department Organization and Administration	2
MDRT 335	Clinical Practicum II	2
MDRT 340	Introduction to Radiotherapy and Nuclear Medicine	2
		<hr/> 14

### *Summer*

MDRT 345 Clinical Practicum III	1
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### *Senior Year*

<i>Fall Course</i>	<i>Credits</i>
MDRT 364 Specialized Radiographic Procedures	3
MDRT 385 or 387 Elective	2
MDRT 365 Clinical Practicum IV	2
Electives (at UMBC)	9
	<hr/> 16

### *Spring Course*

	Electives**	12
MDRT 389	Senior Thesis	2
MDRT 375	Clinical Practicum V	2
		17

\*\* At UMBC.



## UNDERGRADUATE MEDICAL PROGRAM

**MDRT 300—*Introduction to Radiologic Technology* (2)**—Fall semester. An overview of radiologic technology through the study of its historical development and its place in the medical field today; the various subdivisions of radiology (diagnostic, therapy and radioisotopes); the organization of the modern radiology department and its personal needs; professional adjustment, and medico-legal aspects of radiology. The course will include direct observation and experience, field trips and guest speakers.

**MDRT 311—*Physics of Diagnostic Radiology* (3)**—Prerequisite, two semesters of physics. Fall semester. This course includes the nature and production of radiation, its measurement, absorption and interaction processes; x-ray equipment construction, evaluation and circuitry; image intensifiers, TV, seriographs, body-section radiography, and functions and construction of radiographic accessories.

**MDRT 312—*Fundamentals of Radiologic Technology* (3)**—Prerequisites, two semesters of chemistry. Fall semester. The chemistry of radiographic processing, processing methods and departmental designed is studied as related to processing, the identification and interpretation of artifacts, maintenance of automatic processors, film characteristics, accessories, exposure parameters and densitometry. Field trips, guest speakers, demonstrations, experiments and labs are included.

**MDRT 313—*Radiologic Human Anatomy and Physiology* (3)**—Prerequisites, two semesters of biology. Fall semester. Human anatomy and physiology are studied with emphasis on radiographic identification of structures and comparison of normal vs. abnormal functioning. This includes lectures, demonstrations and labs.

**MDRT 314—*Radiographic Procedures I* (4)**—Fall semester. Included in this course is medical terminology and nursing procedures common to the general radiographic situation and basic principles and methods of radiography with emphasis on the skeletal system especially the skull, chest and abdomen. This also includes lectures, demonstrations, labs and clinical experience.

**MDRT 315—*Clinical Practicum I* (2)**—Fall semester. Students receive supervised clinical practice in radiographic examinations covered in Radiographic Procedures I (20 hours per week). A weekly one hour seminar is also part of the course.

**MDRT 330—*Radiobiology and Protection* (2)**—Prerequisites, MDRT 311 and 313. Spring semes-



ter. Principles of radiobiology, genetic and somatic effects of radiation, basic radiation monitoring surveys and techniques of protecting the patient and personnel are studied through labs and experimentation.

**MDRT 334—*Radiographic Procedures II* (3)**—Prerequisites, one semester each of psychology and sociology, MDRT 314 and 315. This course includes the study of procedures requiring the use of contrast media, specifically the gastrointestinal and urinary tracts; evaluation of contrast media, and special technical and psychosocial requirements in pediatric radiography. Teaching will be by means of lectures, demonstrations and field trips in pediatric radiography and technical evaluation of radiographs.

**MDRT 333—*Pathology* (3)**—Prerequisite, MDRT 313. Spring semester. Students study the nature and etiology of disease, review medical and surgical diseases and learn how these diseases are diagnosed via radiographic techniques. Guest lectures will be included.

**MDRT 335—*Clinical Practicum II* (2)**—Corequisite, MDRT 334. Spring semester. Students receive clinical observation experience and supervised practice in fluoroscopic urographic procedures and pediatric radiography (20 hours per week).

**MDRT 336—*Departmental Organization and Administration* (2)**—Prerequisites, one semester each of psychology and sociology. Spring semester. Principles of administration and supervision in departments of radiology are explored as well as personnel and intra or interdepartmental problems.





**MDRT 340—Introduction to Radiotherapy and Nuclear Medicine Technology (2)**—Prerequisite, MDRT 311. Corequisites, MDRT 330 and 333. Spring semester. Students explore the goals of radiotherapy and nuclear medicine, basic equipment and procedures and the physics of radiotherapy and nuclear medicine.

**MDRT 345—Clinical Practicum III (1)**—Prerequisite, MDRT 340. Summer semester. Students are observed and supervised in nuclear medicine and radiotherapy (30 hours per week).

**MDRT 364—Specialized Radiographic Procedures (3)**—Fall semester. Included in this course is the study of indications, techniques and equipment necessary in vascular and neuroradiography as well as discussions and demonstrations of anatomical structures and disease processes. Guest lectures are given, too.

**MDRT 365—Clinical Practicum IV (2)**—Prerequisite, MDRT 335. Fall semester. Observation and supervised clinical experience is provided in vascular and neurological radiography. Experience is also gained in sterile technique procedures associated with these examinations (20 hours per week).

**MDRT 375—Clinical Practicum V (2)**—Prerequisite, MDRT 365. Spring semester. Clinical experience in general radiography gives the student an opportunity to exhibit independent judgment and latitude. Areas of assignment will be selected on an individual basis to meet the needs and interests of the student (20 hours per week).

**MDRT 388—Seminar in Radiologic Technology (1)**—Spring semester. Discussion is regarding

technical, organizational and personal problems encountered in clinical practicum MDRT 375 and there is a review of current literature in radiologic technology.

**MDRT 389—Senior Thesis (2)**—Spring semester. The student will conduct independent research in an area of his interest and will present the results of his study in thesis form.

#### *Electives*

All students will be required to select *one* of the following electives.

**MDRT 385—Practicum in Departmental Management (2)**—Fall semester. Students receive clinical experience in advanced technical problems, supervision and basic administrative functions (five hours per week). There is also a seminar in advanced problems.

**MDRT 387—Methods of Teaching in Radiologic Technology (2)**—Fall semester. The course includes principles of teaching applied in radiologic technology including observation and practice teaching.







# FACULTY

## ANATOMY

### *Professor*

O'Morchoe, Charles C.C., acting chairman; BA, Trinity College, Dublin University, Ireland, 1953; MB, BCh, BAO, 1955; MA, 1959; MD, 1961; PhD, 1969.

Brantigan, Otto C., BS, Northwestern University, 1931; MD, 1934.\*

Figge, Frank H.J., BA, Colorado College, 1927; PhD, University of Maryland, 1934; DSc (honorary), Colorado College, 1968.

Krahl, Vernon E., BS, University of Pittsburgh, 1939; MS, 1940; PhD, University of Maryland, 1946.

### *Associate Professor*

Donati, Edward J., BA, King's College, 1951; PhD, University of Maryland, 1964.

Masters, Jason M., BA, High Point College, 1951; MS, Sul Ross State College, 1956; PhD, University of Maryland, 1965.\*

Mech, Karl F., BS, University of Maryland, 1932; MD, 1935.\*

Rennels, Marshall L., BS, Eastern Illinois University, 1961; MA, University of Texas, 1964; PhD, 1966.

Wadsworth, Gladys E., BS, State Teachers College, 1936; MA, Columbia University, 1942; PhD, University of Maryland, 1955.

### *Assistant Professor*

Barrett, Charles P., BS, Kings College, 1957; PhD, University of Maryland, 1969.

Bulmash, Melvin H., BA, Johns Hopkins University, 1946; DDS, University of Maryland, 1950; MS, 1969.\*

Church, Lloyd E., BA, West Virginia University, 1942; MS, George Washington University, 1951; DDS, University of Maryland, 1944; PhD, George Washington University, 1959.\*

Klein, Albert W., BA, Washington and Jefferson College, 1964; PhD, Duke University, 1973.

Linhardt, Elmer G., MD, University of Maryland, 1937.\*

O'Morchoe, Patricia J., BA, Trinity College, Dublin University, Ireland, 1953; MB, BCh, BAO, 1955; MA, 1966; MD, 1966.\*

Petersen, Kyle W., BS, George Washington University, 1964; MS, 1965; PhD, 1968.

Petralli, John P., BS, Davis and Elkins College, 1955; PhD, University of Maryland, 1969.\*

Ramsay, Frederick J., assistant dean for student affairs; BS, Washington and Lee University, 1958; MS, University of Illinois, 1960; PhD, 1962.\*

Schulter, Francis P., BS, Birmingham Southern College, 1952; MS, Emory University, 1954; PhD, George Washington University, 1971.

### *Instructor*

Ude, Robert H., BS, University of Missouri, 1966.\*

## ANESTHESIOLOGY

### *Professor*

Helrich, Martin, chairman; BS, Dickinson College, 1946; MD, University of Pennsylvania, 1946.

Joseph, Samuel I., AB, DePauw University, 1939; MS, New York University; PhD, 1943; MD, Wayne University, 1948.

McAslan, T. Crawford, MB, ChB, University of Glasgow, 1945; DA, Royal College of Physicians of London and the Royal College of Surgeons of England, 1961.

### *Associate Professor*

Chodoff, Peter, BS, Temple University, 1947; MD, Jefferson Medical College, 1951.\*

Glassman, Lionel, MD, University of Toronto, 1945.\*

Selvin, Beatrice L., BA, University of Michigan, 1942; MD, New York Medical College, 1945.

\* part time

*Assistant Professor*

- Ashman, Michael, BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.
- Kaplow, Sheppard, MD, Dalhousie University, 1959.\*
- Keller, Melvin L., BS, University of Illinois, 1945; DDS, University of Detroit, 1948; MD, University of Amsterdam, 1955.\*
- Liteanu, Michael, MD, Free University of Brussels, 1949.\*
- Matjasko-Chiu, Martha Jane, BA, Mercyhurst College, 1964; MD, Medical College of Pennsylvania, 1968.
- Parelhoff, Merrill E., BS (pharmacy), University of Maryland, 1944; MD, 1949.\*
- Penafiel, Mario L., University of Santo Thomas, 1955; MD, 1960.
- Seebert, Calbert T., Virginia Military Institute, 1945; MD, Jefferson Medical College, 1951.

*Instructor*

- Del Rosario, Romeo S., AB, Philippine Union College, 1954; MD, Manila Central University, 1958.\*
- Duarte, Jose G., MD, University of Mexico, 1958.
- Goldman, Edwin J., BS, University of New Brunswick, 1956; MD, Dalhousie University, 1961.\*
- Tolentino, Joel V., MD, University of the East, 1965.
- Wassif, Anis M., MD, BCH, Cairo University School of Medicine, 1960.

**BIOLOGICAL CHEMISTRY***Professor*

- Adams, Elijah, chairman; BA, Johns Hopkins University, 1938; MD, University of Rochester, 1942.
- Frank, Leonard H., BA, University of Oklahoma, 1950; PhD, Johns Hopkins University, 1957.
- Lambooy, John P., dean for graduate studies and research, Baltimore campus; BA, Kalamazoo College, 1937; MS, 1938; MA, University of Illinois, 1939; PhD, University of Rochester, 1942.\*
- Pomerantz, Seymour H., BA, Rice Institute, 1948; PhD, University of Texas, 1952.

*Associate Professor*

- Bucci, Enrico, MC, Liceo Mamiani, Italy, 1950; MD, University of Rome, Italy, 1956; PhD (biochemistry), 1965.
- Kirtley, Mary E., BA, University of Chicago, 1957; MA, Smith College, 1958; PhD, Western Reserve, 1964.
- LaBrosse, Elwood H., BS, Northwestern University, 1945; MS, 1948; MD, 1949; PhD, University of Texas, 1956.\*
- Tildon, J. Tyson, BS, Morgan State College, 1954; PhD, Johns Hopkins University 1965.\*

*Assistant Professor*

- Black, Lindsay W., BS, University of Chicago, 1962; PhD, Stanford University, 1967.

- Bucci, Clara F., MC, Liceo Volpicelli, Italy, 1952; MD, University of Rome, Italy, 1956; PhD, 1964.
- Gryder, Rosa M., BS, Bucknell, 1947; MS, Yale University, 1949; PhD, Johns Hopkins University, 1955.
- Max, Stephen R., BS, University of Rhode Island, 1962; PhD, 1966.\*
- Rao, N. Venkateswara, BSc, Madras University, India, 1954; MSc, Saugar University, India, 1956; PhD, Madras University, India, 1963.
- Rosen, Barry P., BS, Trinity College, 1965; MS, University of Connecticut, 1969; PhD, 1969.

*Instructor*

- Brown, Ann Virginia, AB, Goucher College, 1940.

**BIOPHYSICS***Professor*

- Mullins, Lorin J., chairman; BS, University of California, 1937; PhD, 1940.
- Sjodin, Raymond A., BS, California Institute of Technology, 1951; PhD, University of California, 1955.

*Associate Professor*

- Hybl, Albert, BA, Coe College, 1954; PhD, California Institute of Technology, 1961.

*Assistant Professor*

- Geduldig, Donald S., BEE, Cornell University, 1955; MS, 1957; PhD, Columbia University, 1965.

**CELL BIOLOGY AND PHARMACOLOGY***Professor*

- Aposhian, H. Vasken, BS, Brown University, 1948; MS, University of Rochester, 1950; PhD, 1953.
- Ludlum, David B., BS, Cornell University, 1951; PhD, University of Wisconsin, 1954; MD, New York University, 1962.

*Associate Professor*

- Byron, Joseph W., BSc, Fordham University, 1952; MSc, Philadelphia College of Pharmacy and Science, 1955; PhD., University of Buffalo, 1959.
- Nussbaum, Alexander L., BS, City College of New York, 1948; MS, Purdue University, 1950; PhD, Wayne State University, 1954.\*

*Assistant Professor*

- Brown, Dennis T., BA, University of Pennsylvania, 1964; PhD, 1967.
- Brown, Neal C., DVM, Cornell University, New York State College of Veterinary Medicine, 1962; PhD, Yale University, 1966.



Burlingham, Byron T., BA, University of Iowa, 1961; MS, 1965; MD, 1966; PhD, Rockefeller University, 1970.

*Emeritus*

Krantz, John C., Jr., BS, University of Maryland, 1923; MS, 1924; PhD, 1928.

## FAMILY PRACTICE

*Professor*

Kowalewski, Edward J., chairman; BS, Franklin and Marshall College, 1941; MD, George Washington University, 1945.

*Associate Professor*

Davis, LeRoy T., BS, Westminster College, 1948; MS, Syracuse University, 1951; PhD, 1954; MD, New York Medical College, 1961.

Guyther, Joseph R., BS, University of Maryland, 1941; MD, 1943.

*Assistant Professor*

Hill, Charles E., BS, Loyola College, 1956; MD, University of Maryland, 1960.

Knipp, Harry L., BS, George Washington University, 1947; MD, University of Maryland, 1951.

Koetter, Hans J., MD, Frankfurt, Germany, 1951.\*

Lilly, John R., BA, Gettysburg College, 1958; MD, Temple University, 1963.\*

Mercer, Phillip W., BS, Wheaton College, 1955; MD, University of Maryland, 1959.

McKay, J. Nelson, MD, University of Maryland, 1952.\*

O'Rourke, William R., BS, Wheaton College, 1958; MD, University of Missouri School of Medicine, 1963.

Sollod, Aaron C., BS (pharmacy), University of Maryland, 1928; MD, 1932.

Weintraub, William C., BS, George Washington University, 1949; MD, Jefferson Medical College, 1955.\*

Weir, W. Douglas, AB, St. John's College, 1958; MD, University of Maryland, 1964.

Welliver, Daniel I., BA, Western Maryland College, 1950; MD, University of Maryland, 1954.\*

*Instructor*

Novak, Theresa M., RN, Georgetown University, 1947; BSNE, University of Maryland, 1958.

## INTERNATIONAL MEDICINE

*Professor*

Clyde, David F., chairman; BA, University of Kansas, 1946; MD, McGill University, 1948; DTMH, London School of Hygiene and Tropical Medicine, 1952; PhD, University of London, 1963.

Barnett, Herbert C., BS, Cornell University, 1939; MS, University of Minnesota, 1946; MPH, University of Pittsburgh, 1953; PhD, 1954.

*Associate Professor*

Aziz, Mohammed A., MBBS, Dacca University, 1954; PhD, University of Minnesota, 1963.\*

Baker, Richard H., BS, University of Illinois, 1958; MS, 1962; PhD, 1965.

*Assistant Professor*

Aslamkhan, Mohammed, BS, Punjab University, 1951; MS, 1953; DSc, Johannes Gutenberg Universitat, 1963.

Barry, Cornelius, BS, St. John Fisher College, 1956; MS, University of Maryland, 1962; PhD, 1964.

Bhalla, Satish C., BS, E. Punjab University, 1954; MS, 1956; MA, University of Kansas, 1963; PhD, University of Notre Dame, 1966.

McCarthy, Vincent C., BA, University of Toronto, 1953; MS, University of Maryland, 1961; PhD, 1967.

Sakai, Richard K., BA, Boston University, 1959; MA, University of Hawaii, 1964; PhD, 1968.

## MEDICINE

*Professor*

Woodward, Theodore E., chairman; BS, Franklin and Marshall College, 1934; MD, University of Maryland, 1938; DSc (honorary), Western Maryland College, 1950; DSc (honorary), Franklin and Marshall College, 1954.

Bereston, Eugene S., dermatology; AB, Johns Hopkins University, 1933; MD, University of Maryland, 1937; MSc, University of Pennsylvania, 1945; DSc, 1955.

Borges, Francis J., BS, University of Maryland, 1948; MD, 1950.

Connor, Thomas B., BA, Loyola College, 1943; MD, University of Maryland, 1946.

Greisman, Sheldon E., MD, New York University, 1949.

Hornick, Richard B., AB, Johns Hopkins University, 1951; MD, 1955.

Karns, James R., BS, University of Maryland, 1939; MD, 1940.\*

Lisansky, Ephraim, T., BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.

McCrum, Fred R., Jr., MD, University of Maryland, 1948.

Morrison, Theodore H., gastroenterology; MD, College of Physicians and Surgeons, 1915.\*

Rapoport, Morton I., BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.

Robinson, Harry M., Jr., dermatology; BS, University of Maryland, 1931; MD, 1935.

Scherlis, Leonard, AB, Johns Hopkins University, 1942; MD, 1945.

Smith, Vernon M., MD, Temple University, 1949.

Stone, William S., BS, University of Idaho, 1924; MS, 1925; MD, University of Louisville, 1929.

- Tigertt, William D., experimental medicine; AB, Baylor University, 1938; MD, 1937.
- Wiswell, John G., BA, Dalhousie University, 1938; BS, 1940; MDCM, 1943.
- Associate Professor*
- Andres, Reubin, MD, Southwestern Medical College, 1944.
- Burnett, Joseph W., AB, Yale University, 1954; MD, Harvard Medical School, 1958.
- Calia, Frank M., AB, Harvard College, 1958; MD, Tufts Medical School, 1962.
- Cooper, Malcolm, MB, ChB, University of Edinburgh, 1960.
- Cotter, Edward F., MD, University of Maryland, 1935.\*
- DuPont, Herbert L., BA, Ohio Wesleyan University, 1961; MD, Emory University, 1965.
- Eastland, J. Sheldon, AB, Johns Hopkins University, 1921; MD, University of Maryland, 1925.
- Entwisle, George, BS, University of Massachusetts, 1944; MD, Boston University, 1948.\*
- Goodman, Jay S., MD, University of Maryland, 1961.
- Gundry, Lewis P., BA, Johns Hopkins University, 1924; MD, University of Maryland, 1928.
- Jiji, Rouben, MD, Royal College of Medicine, Baghdad, Iraq, 1950.
- Jones, David J., BS, Grove City College, 1954; MD, Jefferson Medical College, 1958; MPH, University of Pittsburgh, 1965.
- Lee, Yu-Chen, BS, Taikoku Imperial University, 1945; MD, National Taiwan University, Formosa, 1949.
- Mead, Joseph, AB, Loyola College, 1954; MD, University of Maryland, 1958.
- Morrison, Samuel, gastroenterology; AB, Johns Hopkins University, 1925; MD, 1929.
- Parker, Robert T., AB, Johns Hopkins University, 1941; MD, 1944.\*
- Raskin, Howard F., BA, Johns Hopkins University, 1945; MD, University of Maryland, 1949.
- Raskin, Joan, BA, Goucher College, 1951; MD, University of Maryland, 1955.
- Sadler, John H., BS, Duke University, 1956; MD, 1960.
- Shapiro, Albert, dermatology; BS, University of Maryland, 1934; MD, 1937.
- Simpson, David G., MB, BCh, Queen's University, Belfast, 1942; MD, 1950.
- Singleton, Robert T., BS, University of Maryland, 1951; MD, 1953.
- Snyder, Merrill J., BS, University of Pittsburgh, 1940; MS, University of Maryland, 1950; PhD, 1953.
- Spicer, William S., Jr., MD, University of Kansas, 1949.
- Spurling, Carroll L., MD, Bowman-Gray School of Medicine, 1947.
- Togo, Yasushi, BS, Tokyo Kotogakke, Japan, 1941; MD, University of Tokyo, 1945.
- Assistant Professor*
- Alevizatos, Aristides C., AB, Washington and Lee University, 1956; MD, University of Maryland, 1960.
- Andrews, Leon P., AB, University of North Carolina, 1942; MD, Harvard Medical School, 1945.\*
- Antlitz, Albert, BS, Georgetown University, 1951; MD, 1955.\*
- Atkins, John L., AB, Mount St. Mary's College, 1932; MD, University of Pennsylvania, 1936.\*
- Beacham, Edmund G., BS, University of Maryland, 1936; MD, 1940.\*
- Burkle, Joseph H., BA, University of Pennsylvania, 1940; MD, 1943.\*
- Calton, Gary, BS, Eastern New Mexico University, 1965; MS, 1968; PhD, Texas A & M University, 1971.
- Carozza, Nijole B., BS, University of Maryland, 1961; MD, 1963.
- Carrol, Douglas G., AB, Yale University, 1937; MD, Johns Hopkins University, 1942.
- Dembo, Donald H., AB, Johns Hopkins University, 1951; MD, University of Maryland, 1955.\*
- Ebeling, William C., III, BS, University of Maryland, 1943; MD, 1944.\*
- Fiset, Lorraine G., AB, Mt. Holyoke College, 1948; PhD, University of Cambridge, England, 1956.
- Fisher, Michael L., MD, University of Illinois, 1967.
- Foreman, Spencer, BS, Ursinus College, 1957; MD, University of Pennsylvania, 1961.
- Freedman, Stanley, AB, Harvard College, 1957; MD, New York University, 1961.\*
- Hamilton, Bruce P.M., MD, ChB, University of Otago, New Zealand, 1960.
- Harmon, Louis E., AB, Lincoln University, 1928; MD, Howard University, 1934.
- Hawkins, Jean E., AB, Georgia State College for Women, 1951; MA, Duke University, 1953; PhD, 1956.
- Hobbins, Thomas E., AB, University of Pennsylvania, 1961; MD, Hahnemann Medical College, 1965.
- Hollander, Mark B., dermatology; AB, Johns Hopkins University, 1927; MD, University of Maryland, 1931.\*
- Hookman, Perry, BA, New York University, 1954; MD, State University of New York, 1958.
- Jacobson, Meyer W., AB, Johns Hopkins University, 1928; MD, University of Maryland, 1932.
- Jackson, Jean, BS, University of Rhode Island, 1963; MD, University of Maryland, 1967.
- Janoski, Alfonso H., BA, Seton Hall University, 1957; MD, Columbia University, 1961.
- Kerr, H. David, BS, Maryville College, 1951; MD, Temple University, 1956.
- Kushner, Herbert A., AB, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.
- Leach, C. Edward, MD, Duke University, 1935.
- Legum, Samuel E., AB, Johns Hopkins University, 1928; MD, University of Maryland, 1932.\*



- Levine, Myron, BS, City College of New York, 1963; MD, Medical College of Virginia, 1967.
- Levy, Robert I., AB, Johns Hopkins University, 1949; MD, 1953.
- Lewandowski, Anthony A., BS, Loyola College, 1951; MD, University of Maryland, 1955.\*
- Libonati, Joseph P., MS, Duquesne University, 1965; PhD, University of Maryland, 1968.
- Marine, David N., MD, Johns Hopkins University, 1947.\*
- Martin, Luis G., MD, Madrid Medical School, 1954.
- Masters, Jason M., BA, High Point College, 1951; MA, Sul Ross State College, 1956; PhD, University of Maryland, 1965.
- McIlhaney, Mary L., BA, University of Texas, 1939; MD, Vanderbilt University, 1944.
- McLean, George, MD, University of Maryland, 1916.
- Merrill, George G., neurology; AB, Princeton University, 1932; MD, Harvard Medical School, 1937.
- Papadopoulos, Chris, MB, BCH, University of Alexandria, Egypt, 1956.
- Pachas, Willy, BS, San Marcos University, 1951; MD, 1959.
- Pachuta, Donald M., BA, Niagra University, 1962; MD, State University of New York at Buffalo, 1966.
- Parisi, Alfred F., AB, Georgetown University, 1959; MD, Cornell University Medical College, 1963.
- Payne, Charles B., BS, Yale University, 1952; MD, University of Pennsylvania, 1956.\*
- Rahman, Abdul N., AB, Johns Hopkins University, 1952; MD, 1956.
- Ramos, Emilio, BA, St. Joseph University, Lebanon, 1955; MD, 1963.
- Reiter, Robert A., AB, Johns Hopkins University, 1928; MD, 1932.
- Rusche, Edward, MD, University of Leyden, The Netherlands, 1954.
- Salan, Jerry, BA, St. John's College, 1954; MD, University of Maryland, 1960.
- Scherlis, Sidney, BA, University of Pennsylvania, 1934; MD, University of Maryland, 1938.\*
- Schmidt, Marcia C., BS, University of Colorado, 1963; MD, University of Florida, 1967.
- Serra, Lawrence M., PhG, University of Maryland, 1925; MD, 1929.
- Shaw, Charles E., BS, University of Maryland, 1942; MD, 1944.
- Smith, Sol, AB, Johns Hopkins University, 1927; MD, University of Maryland, 1931.
- Smoot, Roland T., BS, Howard University, 1948; MD, 1952.
- Standiford, Harold C., AB, Johns Hopkins University, 1960; MD, University of Maryland, 1964.
- Swisher, Kyle Y., Jr., MD, University of Maryland, 1948.\*
- Wentz, Dennis K., assistant dean for affiliations; BA, North Central College, Naperville, Ill., 1957; MD, University of Chicago, 1961.
- Wisseman, Charles L., Jr., BA, Southern Methodist University, 1941; MS, Kansas State College, 1943; MD, Southwestern Medical School, 1946.
- Woodward, Celeste L., BA, University of Aix-Marseilles, France, 1932; MD, University of Maryland, 1938.
- Yaffee, Stanley N., BS, University of Maryland, 1941; MD, 1944.\*
- Zieve, Philip D., AB, Franklin and Marshall College, 1954; MD, University of Maryland, 1958.

#### *Instructor*

- Austin, Perry G.M., AB, Princeton University, 1944; MD, Columbia College of Physicians and Surgeons, 1947.
- Bianco, Emidio A., BS, Loyola College, 1950; MD, Georgetown University, 1954.\*
- Burgin, Bernard, BA, University of Cincinnati, 1936; MD, 1939.
- Chun, Young, MD, Severance Union Medical College, Seoul, Korea, 1933; PhD, Nagoya Imperial University, Japan, 1942.
- Church, Gerard, ChB, University of Glasgow, 1951; FRFPS, 1956.
- Cohen, B. Stanley, MD, University of Maryland, 1947.
- Cross, Ernest, Jr., AB, Johns Hopkins University, 1937; MD, 1941.
- Davis, John R., BA, West Virginia University, 1938; MD, University of Maryland, 1942.
- DeFelice, Charles E., BS, University of Maryland, 1962; MD, 1967.
- Dudley, Winston C., BA, Oberlin College, 1943; MD, University of Maryland, 1951.
- Dureza, Renan J., AA, University of St. Augustine, 1959; MD, University of Santo Tomas, Philippines, 1961.
- Feldman, Maurice, Jr., BA, Johns Hopkins University, 1941; MD, University of Maryland, 1944.
- Flynn, Philip D., BS, Georgetown University, 1929; MD, 1933.
- Gakenheimer, William A., MD, University of Maryland, 1947.
- Hayes, Michael, BS, University of Maryland, 1959; MD, 1963.
- Inayatullah, Mohammad, MB, BS, King Edward Medical College, Lahore, Pakistan, 1956.
- Kallins, Edward S., PhG, University of Maryland, 1930; BS, 1932; MD, 1934.
- Kammer, William H., BA, Loyola College, 1935; MD, University of Maryland, 1939.
- Karpers, Bernard S., BS, Loyola College, 1958; MD, University of Maryland, 1962.
- Kemick, Irvin B., PhG, University of Maryland, 1933; BS, 1935; MD, 1937.
- Keown, Lauriston L., BA, St. John's College, 1929; MD, University of Maryland, 1933.
- King, Joseph D.B., AB, Princeton University, 1941; MD, Johns Hopkins University, 1944.
- Leslie, Franklin E., MD, University of Maryland, 1941.
- Levin, Manuel, AB, Johns Hopkins University, 1930; MD, University of Maryland, 1934.

Lovice, Harris, BS, Heidelberg College, Ohio, 1951; MD, Upstate Medical Center, New York, 1955.\*

Messina, John J., BA, Johns Hopkins University, 1956; MD, University of Maryland, 1960.\*

Myers, John A., BE, Johns Hopkins University, 1927; MEE, 1933; MD, 1938.\*

Nolan, James J., BS, Loyola College, 1937; MD, University of Maryland, 1941.\*

Oursler, David A., AB, Johns Hopkins University, 1952; MD, University of Maryland, 1956.

Owens, L. Kemper, BS, Franklin and Marshall College, 1948; MD, University of Chicago, 1960.\*

Pijanowski, Walter J., BS, University of North Carolina, 1937; MD, University of Maryland, 1939.

Ramapuram, George M., MB, BS, University of Madras, 1950.\*

Reed, Julian, BS, University of Maryland, 1948; MD, 1952.\*

Rogers, John F., BA, Johns Hopkins University, 1963; MD, University of Maryland, 1967.

Saunders, Elijah, BS, Morgan State College, 1956; MD, University of Maryland, 1960.\*

Schuster, Marvin M., BA, University of Chicago, 1950; BS, 1951; MD, 1955.

Scott Harry B., BA, University of Virginia, 1943; MD, University of Maryland, 1947.

Sherrer, Edward L., Jr., BS, Bowling Green State University, Ohio, 1952; MSc, Ohio State University, 1953; MD, 1958.

Sherrill, Elizabeth B., BS, University of Maryland, 1938; MD, 1941.\*

Shockett, Bernard R., BS, University of Maryland, 1938; MD, 1941.

Sina, Bahram, University of Tehran, 1948; University of Paris, France, 1952.

Speed, William C., III, BS, Trinity College, 1940; MD, Johns Hopkins University, 1943.

Stauffer, John C., AB, Princeton University, 1949; MD, Harvard Medical School, 1953.

Stephenson, Richard R., BS, University of Maryland, 1958; MD, 1962.\*

Stone, John H., BS, University of Maryland, 1947; MD, 1951.\*

Vollmer, Frederick J., BS, Mt. St. Mary's College, 1934; MD, University of Maryland, 1938.

Waghelstein, Julius, BS, University of Maryland, 1931; MD, 1935.\*

#### *Emeritus Professor*

Krause, Louis A.M., MD, University of Maryland, 1917.

Love, William S.

## MICROBIOLOGY

#### *Professor*

Wissemann, Charles L., Jr., chairman; BA, Southern Methodist University, 1941; MS, Kansas State College, 1943; MD, Southwestern Medical School, 1946.

Traub, Robert, BS, College of the City of New York, 1938; MS, Cornell University, 1939; PhD, 1947.

#### *Associate Professor*

Eylar, Ollie R., BA, University of Minnesota, 1952; MS, 1955; PhD, 1959.

Fiset, Paul, BA, Laval University, Quebec, Canada, 1944; MD, 1949; PhD, University of Cambridge, England, 1956.

Kessel, Rosslyn W. I., MBBS, University College Hospital Medical School, London, England, 1955; PhD, Rutgers University, 1960.

Snyder, Merrill J., BS, University of Pittsburgh, 1940; MS, University of Maryland, 1950; PhD, 1953.\*

#### *Assistant Professor*

Myers, William F., BA, University of Kansas, 1949; MA, 1957; PhD, 1958.

Ollodart, Robert M., BA, University of Buffalo, 1953; MA, 1963; MD, 1956; PhD, University of Maryland, 1970.\*

Osterman, Joseph V., Jr., BA, University of Maryland, 1957; PhD, 1969.

Rosenzweig, Edward C., AB, Centre College, 1951; MS, University of Maryland, 1956; PhD, 1959.

## NEUROLOGY

#### *Professor*

Nelson, Erland, chairman; AB, Carthage College, 1947; MD, Columbia University College of Physicians and Surgeons, 1951; PhD, University of Minnesota, 1961.

Heck, Albert F., AB, Johns Hopkins University, 1954; MD, University of Maryland, 1958.

Mayer, Richard F., BS, St. Bonaventure College, 1950; MD, University of Buffalo School of Medicine, 1954.

Merlis, Jerome K., neurophysiology; BS, University of Louisville, 1933; MD, 1937; MS, 1938.

Van Buskirk, Charles, AB, Westminster College, 1939; MS (microanatomy), St. Louis University, 1941; PhD, University of Minnesota, 1943; MD, Albany Medical College, 1947; MS (neurology), University of Minnesota, 1953.\*

#### *Associate Professor*

Price, Thomas R., BA, University of Virginia, 1956; MD, 1960.

Rennels, Marshall L., anatomy; BA, Eastern Illinois University, 1961; MA, University of Texas Medical Branch, 1964; PhD, 1966.

Teitelbaum, Harry A., BS, University of Maryland, 1929; MD, 1935; PhD, 1936.\*

Yannakakis, George D., MD, National University of Athens, Greece, 1956.\*

#### *Assistant Professor*

Kramer, Morton D., AB (pharmacy), University of Maryland, 1950; MD, 1955.\*



Max, Stephen R., biochemistry; BS, University of Rhode Island, 1962; PhD, 1966.

Mosser, Robert S., BS, University of Maryland, 1949; MD, 1951.

Oleynick, Anatol H., AB, University of Pennsylvania, 1952; MD, University of Chicago School of Medicine, 1956.\*

Rozear, Marvin P., BS, Davidson College, 1962; MD, Duke University, 1966.

Sutton, Granger G., BS, Massachusetts Institute of Technology, 1952; MD, University of Maryland, 1958.

Toro, Rodrigo, AB, Colegio "Deogracias Cardona," Colombia, 1952; MD, Universidad Nacional, Colombia, 1959.

#### *Instructor*

Eckholdt, John W., AB, University of Minnesota, 1959; BS, 1961; MD, 1963.\*

Hulfish, Barbara, AB, American University, 1944; MD, University of Rochester, 1952.

## OBSTETRICS AND GYNECOLOGY

#### *Professor*

Haskins, Arthur L., chairman; BA, University of Rochester, 1938; MD, 1943.

Allen, Willard M., BS, Hobart College, 1926; MS, University of Rochester, 1929; MD, 1932.

Kaltreider, D. Frank, BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.

#### *Associate Professor*

Ances, Isadore G., BS, University of Maryland, 1956; MD, 1959.

Cornbrooks, Ernest I., Jr., BA, St. John's College, 1931; MD, University of Maryland, 1935.\*

Durkan, James P., AB, Loyola College, 1955; MD, University of Maryland, 1959.

McNally, Hugh B., BS, University of Maryland, 1930; MD, 1934.\*

Middleton, Edmund B., MD, University of Maryland, 1949.

Munford, Richard S., BA, University of Rochester, 1951; MD, Yale University, 1951.

VillaSanta, Umberto, MD, University of Padua, Italy, 1950.

#### *Assistant Professor*

Diggs, Everett S., BS, University of Maryland, 1934; MD, 1937.\*

Dixon, D. McClelland, BS, University of Maryland, 1932; MD, 1936.\*

Dumler, John C., BS, University of Maryland, 1938; MD, 1932.\*

Hisley, John C., AB, Washington and Lee University, 1960; MD, University of Maryland, 1965.

Kardash, Theodore, BS, University of Maryland, 1938; MD, 1942.\*

Mould, L. Louis, MD, Queen's University, Ontario, 1952.\*

Moszkowski, Erica F., BS, Liceo Nacional De Senioritas NI, 1946; MD, University of Buenos Aires, Argentina, 1954.

Perticucci, Gerald, MD, University of Milan, 1962.

Seegar, J. King B.E., Jr., BA, Columbia University, 1933; MD, University of Maryland, 1937.\*

#### *Instructor*

Kho, Ronald L. S., MD, University of Indonesia, 1963.

#### *Emeritus*

Davis, George H., BS, Washington College, 1932; MD, University of Maryland, 1936.\*

Reese, John M., MD, University of Maryland, 1920.\*

Siegel, Isadore A., AB, Johns Hopkins University, 1919; MD, 1923.

## OPHTHALMOLOGY

#### *Professor*

Richards, Richard D., chairman; AB, University of Michigan, 1948; MD, 1951; MSc, State University of Iowa, 1957.

Fox, Samuel L., BS, University of Maryland, 1936; MD, 1938.

Michaelis Moritz, PhD, University of Wurzburg, 1934.

Schocket, Stanley S., BS, University of Maryland, 1955; MD, 1959.

#### *Associate Professor*

Young, Lois A., BS, Howard University, 1956; MD, University of Maryland, 1960.

#### *Assistant Professor*

Braver, David A., BS, Ohio State University, 1957; MD, University of Maryland, 1963.

Creamer, John J., BS, University of Maryland, 1950; MD, New York Medical College, 1960.

Feinberg, Gilbert N., BS, Johns Hopkins University, 1955; MD, University of Maryland, 1959.

Goldberg, Julian R., AB, Johns Hopkins University, 1951; MD, University of Maryland, 1955.

Hameroff, Stephen B., BS, University of Maryland, 1962; MD, 1966.

Jones, Thomas C., BS, Florida A&M University, 1942; MD, Meharry Medical College, 1945.

Katzen, Leeds E., BS, University of Maryland, 1958; MD, 1964.

Meisels, Alfred A., MD, University of Vienna, 1958.

Ross, Jerome, BS, University of Maryland, 1957; MD, 1960.

#### *Instructor*

Ehrlich, Gary L., BS, Dickinson College, 1961; MD, University of Maryland, 1965.

Haddad, Nickie J., AB, West Virginia University, 1959; MD, Jefferson Medical College, 1963.

- Kasper, Robert L., BS, University of Miami, 1960; MD, 1963.
- Kohlhepp, Paul A., BS, Loyola College, 1958; MD, University of Maryland, 1962.
- Kronthal, Alfred, BS, Loyola College, 1957; MD, University of Maryland, 1961.
- Leffler, Martha B., BA, Johns Hopkins University, 1963; MD, 1966.
- Lipson, Martin L., MD, University of Michigan, 1966.
- Miller, Gerald A., BS, University of Maryland, 1957; MD, 1961.
- O'Rourke, Thomas R., Jr., BS, University of Maryland, 1957; MD, 1962.
- Ortel, Rodney L., BA, University of Pennsylvania, 1957; MD, University of Maryland, 1961.
- Silver, Allen E., BA, Wayne State University, 1959; MD, 1963.
- Susel, Richard M., BS, University of Maryland, 1962; MD, 1966.

## PATHOLOGY

### *Professor*

- Trump, Benjamin F., chairman; BA, University of Missouri, 1953; MD, University of Kansas, 1957.
- Firminger, Harlan I., AB, Washington University, 1939; MD, 1943.
- Fisher, Russell S., forensic pathology; BS, Georgia School of Technology, 1937; MD, Medical College of Virginia, 1942.\*
- Garcia, Julio H., BS, National College of St. Bartholomew, Bogota, 1951; MD, National University of Colombia, 1958.
- Koss, Leopold, MD, University of Bern, 1946.\*
- Lundenberg, Richard, MD, University of Berlin, 1944.\*
- Middlebrook, Gardner, AB, Harvard College, 1938; MD, Harvard Medical School, 1944.
- Rasmussen, Peter, MD, Temple University, 1952.
- Schultz, Robert B., AB, Whitman College, 1946; MA, Yale University, 1952; MD, 1952.\*
- Tigertt, William D., MD, Baylor University, 1937; AB, 1938.
- Wood, Colin, anatomical pathology; MB, ChB, Birmingham University, 1946; MD, 1957.

### *Associate Professor*

- Bulger, Ruth E., AB, Vassar College, 1958; AM, Radcliffe, 1959; PhD, University of Washington, 1962.
- Kornblum, Ronald N., forensic pathology; BS, UCLA, 1955; MD, University of California, 1959.\*
- Masters, Jason M., head, Department of Medical Technology; BA, High Point College, 1951; MA, Sul Ross State College, 1956; PhD, University of Maryland, 1965.
- Mergner, Wolfgang J., MD, Justus Liebig University, Giessen, 1961.
- Oster, Walter F., BS (pharmacy), University of Maryland, 1956, MD, 1961.\*

- Reuber, Melvin D., AB, University of Kansas, 1952; MD, 1958.
- Schweda, Paul, forensic pathology; PhD, University of Vienna, 1955.\*
- Smith, Andrew, G., BS, Pennsylvania State College, 1940; MS, University of Pennsylvania, 1947; PhD, 1950.
- Toll, M. Wilson, MSc., McGill University, 1935; MD, 1940.\*

### *Assistant Professor*

- Adams, John E., BS, University of Maryland, 1954; MD, 1956.\*
- Anthony, Ronald L., BA, Susquehanna University, 1961; PhD, University of Kansas, 1965.
- Arstila, Antti U., MD, University of Turku, Finland, 1965.\*
- Bauer, Fred, BA, University of Colorado, 1957; MD, Albany Medical College, 1962.\*
- Bhagavan, Belur S., MBBS, R.G. Kar Medical College, Calcutta, 1958.\*
- Breitnecker, Rudiger, MD, University of Vienna, 1954.\*
- Brown, Charles, AB, Princeton, 1954; MD, University of Pennsylvania, 1958.\*
- Cartwright, Willie Q., MS, New York University, 1971.
- Cranley, Robert E., BS, University of Maryland, 1965; MD, 1958.\*
- Cummings, Dan M., BS, Bradley University, 1949; MS, Trinity University, 1960.
- Dawson, R. Ben, AB, BS, Hampden-Sydney College, 1958; MD, University of Virginia, 1963.
- Dhar, Jyotsna K., BS, Calcutta University, 1956; MD, Nilratan Sircar Medical College, 1962.\*
- Fazekas, Victor A., MD, George Washington School of Medicine, 1960.\*
- Frost, James L., AB, Princeton, 1953; MD, Johns Hopkins University, 1957.
- Griggs, E. Allan, BA, VMI, 1964; MD, University of Virginia, 1968.\*
- Guerin, Paul F., forensic pathology; AB, Wittenburg College, 1942; MD, University of Pennsylvania, 1945.\*
- Hameli, Ali Z., neuropathology; Alborz College, Tehran, Iran, 1951; MD, Tehran University, 1957.\*
- Hicken, William J., BA, Loyola College, 1954; MD, University of Maryland, 1958.\*
- Jiji, Reuben M., MD, Royal College of Medicine, Baghdad, Iraq, 1950.
- Jiji, Violet, MD, Royal College of Baghdad, 1950.\*
- Kahng, Myong W., BS, Seoul National University, 1957; MS, University of Maryland, 1962; PhD, 1967.
- Kime, P. Watson, BSc., University of Wales, 1950; MB, BCH, Welsh National School of Medicine, 1953.\*
- King, Walter B., AB, University of California, 1948; MD, Stanford University, 1954.\*
- Knoblock, Edward C., clinical chemistry; AB, Western State College of Colorado, 1942; MS, University of Maryland, 1959.



Laiho, Kauno U., MD, University of Helsinki, 1967.\*

Lancaster, Robert G., BS, Gonzaga University, 1952; MD, University of Maryland, 1955.\*

Ling, Virginia, MD, University of Madrid, University of Zaragoza, Spain, 1961.

Mulloy, William P., forensic pathology, BS, Georgetown University, 1950; MS, Columbia University, 1952; MD, University of Lausanne, 1958.\*

Nagle, Raymond, BS, Washington State University, 1960; MD, University of Washington, 1964.

Olivier, Margaret, BA, University of Pennsylvania, 1955; PhD, University of Maryland, 1969.

Passen, Selvin, BS, University of Maryland, 1957, MD, 1960.\*

Petrucchi, John, BS, Fordham University, 1952; MD, University of Geneva, 1957.\*

Platt, Marvin, BS (pharmacy), University of Maryland, 1951; BS, 1953; MD, 1956.\*

Pyeatte, Joella C., BS, University of Oklahoma, 1950; MD, 1954.

Rehak, Edward, BS, Loyola, 1945; MD, Georgetown University, 1950.\*

Rodrigues, Ferdinand C., MD, University of Philippines, 1965.

Saladino, Andrew J., BS, Georgetown University, 1960; MD, 1964.

Sheehan, John, AB, Seton Hall, 1961; MD, N.J. College of Medicine, 1965.\*

Sherrer, Edward L., Jr., BS, Bowling Green State University, Ohio, 1952; MSc., Ohio State University, 1953; MD, 1958.\*

Shin, Moon L., MD, Soo Do Medical College, Seoul, Korea, 1962.

Taylor, James E., BS, University of Maryland, 1956; MD, 1958.\*

Tiamson, Esperanza, MD, University of Santo Tomas, Manila, 1954.\*

Tyson, Greta, BS, State College at Bridgewater, Mass., 1955; MS, University of New Hampshire, 1957; PhD, University of California, 1967.

Zussman, William V., BS, College of New York, 1957; MD, New York University, 1962.

#### *Instructor*

Ambrose, Arthur B. C., MS, Howard University, 1970.

Bergeron, Jon D., MEd, Towson State, 1970; MS, 1973.

Billings, David A., BS, University of Maryland, 1972.

Caplan, Yale H., BS, University of Maryland, 1963; PhD, 1968.

Eng, Joyce, MS, Long Island University, 1972.

Fox, Timothy R., BS, University of Maryland, 1966.

Gonzalez, Karen M., BS, University of Maryland, 1971.

Jain, Usha, MBBS, S.M.C. Medical College, 1965.

Kamijyo, Yoshinari, BS, Shinshu University, 1956; MD, Kyoto University, 1960.

Kim, Kook M., MD, Seoul National University, 1960.

McDowell, Elizabeth M., BVetMed., Royal Veterinary College, University of London, 1964; BA, University of Cambridge, 1968; PhD, University of Cambridge, 1971.

Reggiardo, Zulema R., BS, College National Rosario, Argentina, 1951; PhD, University National of Litoral, Argentina, 1958.

Rodriguez, Ferdinand C., MD, University of the Philippines, 1965.

Silver, Sylvia, BA, Drake University, 1965.

Valigorsky, Jon M., BS, University of Maryland, 1963; MD, 1968.

#### *Emeritus*

Wagner, John, neuropathology; BS, Washington College, 1934; MD, University of Maryland, 1938.

Wright, Robert B., BS, Centre College, 1920; MD, Johns Hopkins University, 1924.\*

## PEDIATRICS

#### *Professor*

Cornblath, Marvin, chairman; MD, Washington University, St. Louis, 1947.

Clemmens, Raymond L., BS, Loyola College, 1947; MD, University of Maryland, 1951.

Finkelstein, Abraham H., MD, University of Maryland, 1927.\*

Friedman, Stanford, BA, Antioch College, 1953; MD, University of Rochester, 1957.

Heald, Felix P., AB, Colorado College, 1943; MD, University of Pennsylvania, 1946.

Hepner, Ray, BS, University of Chicago, 1941; MD, 1944.

Kaplan, Eugene, BA, Dartmouth College, 1933; MD, New York University, 1937.

Ozand, Pinar, BS, Yenisehir Maaril College, 1950; MD, Ankara University Medical School, 1956.

Scherlis, Sidney, BA, University of Pennsylvania, 1934; MD, University of Maryland, 1938.

Walker, Stuart H., AB, Middlebury College, 1942; MD, New York University, 1945.

Weaver, Karl H., AB, West Virginia University, 1950; MD, University of Maryland, 1953.

#### *Associate Professor*

Baldwin, Ruth, BS, University of Maryland, 1942; MD, 1943.

Davens, Edward, AB, Stanford University, 1932; MD, 1938.

Glaser, Kurt, MD, University of Lausanne, 1959; MSc, University of Illinois, 1948.

Gorten, Martin K., BA, Western Maryland College, 1943; MD, University of Maryland, 1949.

Kappelman, Murray, BS, University of Maryland, 1953; MD, 1955.

Lentz, George A., Jr., AB, Johns Hopkins University, 1953; MD, University of Maryland, 1957.

Quivers, William, BS, Hampton Institute, 1942; MD, Meharry Medical College, 1953.

Raiti, Salvatore, MBBS, University of Queensland, 1958; MRCP, Glasgow, 1962.  
 Seabold, William M., AB, University of Maryland, 1928; MD, 1931.  
 Stifler, Jean Rose, AB, University of North Carolina, 1932; MD, Cornell Medical College, 1936; MPH, Johns Hopkins University, 1959.  
 Stine, Oscar C., BA, Oberlin College, 1950; MD, George Washington University, 1954; DrPH, Johns Hopkins University, 1960.  
 Tildon, J. Tyson, BS, Morgan State, 1954; PhD, Johns Hopkins University, 1965.  
 Wells, Gibson J., BS, Johns Hopkins University, 1932; MD, University of Maryland, 1936.

#### *Assistant Professor*

Ault, Virginia Lee, BS, University of Maryland, 1950; RN, Union Memorial Hospital, 1945; MD, University of Vermont, 1959.  
 Balis, Sophia, DDS, University of Athens, 1957; DDS, University of Toronto, 1966.  
 Brodell, Robert, BA, Washington Jefferson College, 1953; MD, Western Reserve, 1957.  
 Burgan, Paul, BS, University of Maryland, 1956; MD, 1962.\*  
 Caplan, Lester H., AB, Johns Hopkins University, 1936; MD, University of Maryland, 1940.\*  
 Chabon, Robert, BS, George Washington University, 1959; MD, Georgetown University, 1963.\*  
 Dawson, Robert, BS, University of Maryland, 1956; MD, 1959.\*  
 Fineman, Jerome, BS, University of Maryland, 1930; MD, 1933.  
 Fleming, Gary, BS, Franklin and Marshall College, 1957; MD, University of Maryland, 1966.  
 Fox, Mary Alice, AB, Women's College, University of North Carolina, 1944; MD, University of Pennsylvania, 1948.  
 Gilman, Priscilla Ann, BA, Swarthmore College, 1957; MD, Western Reserve, 1962.  
 Gingell, Robert, BS, American University, 1960; MD, University of Maryland, 1964.  
 Grant, John A., AB, Gettysburg College, 1953; MD, University of Pennsylvania, 1957.  
 Grubb, Wilson, AB, Johns Hopkins University, 1932; MD, 1937.\*  
 Gutberlet, Ronald L., AB, Washington and Lee University, 1956; MD, University of Maryland, 1961.  
 Heldrich, Frederick J., Jr., BA, Gettysburg College, 1945; MD, University of Maryland, 1948.  
 Holcomb, Thomas, MD, University of Vermont, 1947.\*  
 Hopkins, Edward, MD, Johns Hopkins University, 1949.\*  
 Huang, Shih-Wen, MD, National Taiwan University, 1962.  
 Hudson, Barbara W., AB, Cornell University, 1949; RN, Columbia Presbyterian School of Nursing, 1952; MD, College of Physicians and Surgeons, 1956.  
 Irwin, Robert C., AB, Georgetown University, 1953; MD, University of Maryland, 1959.\*  
 Jensen, Philip J., AB, University of Virginia,

1947; MD, Johns Hopkins University, 1952; MSc, University of Pennsylvania, 1960.  
 Kaiser, Theodore, H., MD, Johns Hopkins University, 1949.  
 Kenny, Thomas J., AB, Washington and Lee University, 1954; MA, Peabody College, 1959.  
 Khan, Misbah, MBBS, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.  
 Lasson, Morris S., medical psychology; MS, Ner Israel College, 1960; MS, Loyola College, 1962; PhD, Catholic University, 1966.  
 Levine, Myron M., BS, City College of New York, 1963; MD, Medical College of Virginia, 1967.  
 London, Richard L., AB, University of Cincinnati, 1945; MD, University of Tennessee, 1949.  
 Maher, Edward E., BS, University of Notre Dame, 1954; MD, Georgetown University, 1958.  
 Maiden, Norma C., AB, Hunter College, 1942; MA, Columbia, 1947.  
 Max, Stephen, pediatric research; BS, University of Rhode Island, 1962; PhD, 1966.  
 Modarressi, Taghi, MD, University of Tehran, 1959.  
 Mosser, Robert S., BS, University of Maryland, 1949; MD, 1951.  
 Nair, Prasanna, MBBS, University of Delhi, 1956.  
 Reilly, Charles, AB, Swarthmore College, 1951; MD, University of Pennsylvania, 1955.\*  
 Ruley, Edward J., BS, The Citadel, Charleston, S.C., 1960; MD, University of Maryland, 1964.  
 Sarles, Richard, BS, Georgetown University, 1957; MD, University of Maryland, 1961.  
 Sigman, Bernice, MD, University of Maryland, 1960; MS, Washington University, 1966.  
 Sila, Ulgan, AB, American Academy for Girls, Turkey; MD, University of Istanbul, Turkey, 1956.  
 Spragins, Melchijah, AB, Johns Hopkins University, 1941; MD, 1944.  
 Vance, Arnold, BS, University of Maryland, 1950; MD, 1953.\*  
 Wapnir, Raul A., Bachelor, National College of Buenos Aires, Argentina, 1947; Licensee in Chemistry, University of Buenos Aires, 1953; Doctor in Chemistry, 1954.  
 White, Benjamin, BA, Furman University, 1941; MD, Medical College of Georgia, 1946.\*  
 Yim, Robert, BS, University of Nevada, 1950; MD, University of Maryland, 1954.\*

#### *Instructor*

Badie, Davood, MD, University of Tehran, Iran, 1955.  
 Baltazar, Remedios, MD, University of Santo Tomas, Philippines, 1962.  
 Bauer, Rudolf, PhD, Catholic University, 1970.  
 Bauernschub, George M., Jr., BS, Loyola College, 1950; MD, University of Maryland, 1954.  
 Bernstein, Leroy, BA, University of Colorado, 1959; MD, George Washington University, 1968.



- Besson, Edwin H., BS, Washington College, 1950; MD, University of Maryland, 1954.
- Brenner, Arnold, MD, University of Maryland, 1960.
- Chang, Albert, AB, Harvard College, 1963; MD, University of Rochester, 1968; MPH, University of California, Berkeley, 1972.
- Cici, Regina, speech and language; BS, Kent State, 1960; MA, Northwestern University, 1961.
- Crosby, Robert M.N., MD, University of Maryland, 1943.
- Deane, Garrett E., BS, Westminster College, 1943; MD, Washington University, 1946.
- Fortier, Dwight, BA, University of Maryland, 1962; MD, 1966.
- Francis, Earlie, BS, Howard University, 1960; MD, University of Maryland, 1964.
- Gordon, Albert, BS, University of Maryland, 1960; MD, 1964.
- Goshorn, Gary, AB, Johns Hopkins University, 1951; MD, University of Maryland, 1955.
- Green, Karl, BS, University of Maryland, 1955; MD, 1959.
- Hayleck, Mary L., AB, Goucher College, 1934; MD, University of Maryland, 1938.
- Hayes, Alice, AB, University of Maryland, 1959; MD, 1963.
- Hecker, W. Alvin, BA, Johns Hopkins University, 1951; MD, University of Maryland, 1955.
- Holthaus, Robert R., AB, University of Maryland, 1961; MD, 1965.
- Howard, Lenore W., medical psychology; AB, University of Connecticut, 1957; MA, University of New Hampshire, 1959.
- Koppanyi, Zsolt H.B., Bachiller, Colegio Nacional, Argentina, 1952; MD, Facultad de Medicina, Argentina, 1959; Doctor en Medicina, 1961.
- Lang, Richard C., BS, University of Maryland, 1955; MD, 1959.
- Lavy, Richard C., BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.
- Layton, Richard, BA, University of Richmond, 1965; MD, University of Virginia, 1969.
- Lee, Hae, MD, Soo Do Medical College of Seoul, Korea, 1961.
- Leffler, Allan, BS, Iowa State, 1962; MD, Johns Hopkins University, 1966.
- Luddy, Ruth E., BA, Notre Dame of Maryland, 1960; MD, University of Maryland, 1964.
- McCaffrey, Jane, BA, Cornell University, 1962; MD, University of Maryland, 1969.
- Miller, Norman L., BS, University of Maryland, 1949; MD, 1951.
- Norton, Clayton, AB, Johns Hopkins University, 1949; MD, 1953.
- O'Donovan, John, BA, Yale, 1961; MD, Johns Hopkins University, 1965.
- Pacanowski, John, BS, University of Scranton, 1962; MD, Jefferson Medical College, 1966.\*
- Pal, Bimal, MBBS, University of Calcutta, 1959; DCH, Royal College of Physicians in Glasgow, 1963; MRCP, 1967; MD, FLEX, Maryland, 1971.
- Payne, John, BA, Berea College, 1962; MD, University of Kentucky College of Medicine, 1966.
- Randol, Charles L., AB, Harvard College, 1938; MD, Johns Hopkins University, 1943.
- Renner, Igne, MBBS, University of Hong Kong, 1953.
- Robinson, Sherman S., BS, Davis and Elkins College, 1953; MD, Georgetown University, 1957.
- Saadat, Manoochehr, MD, University of Tehran College and Medical School, 1961.
- Said, Dhia, MB, ChB, Baghdad University, 1956.\*
- Santos, Arturo, AA, University of Philippines College, 1963; MD, 1967.
- Sardana, Irene, medical social work; BS, Bangalore, India, 1956; BS, Ohio State University, 1958; MSW, Howard University, 1961.
- Saunders, Oakley H., MD, Meharry Medical College, 1957.
- Scherlis, Leonard, AB, Johns Hopkins University, 1942; MD, 1945.
- Sinton, William A., Jr., BS, William and Mary, 1952; MD, University of Maryland, 1956.
- Wich, J. Carlton, BS, University of Maryland, 1938; MD, 1943.
- Wright, Charles E., AB, Centre College of Kentucky, 1951; MD, Johns Hopkins University, 1955.

#### *Emeritus*

- Bradley, J. Edmund, BS, Loyola College, 1928; MD, Georgetown University, 1932.
- Glick, Samuel S., BA, Johns Hopkins University, 1920; MD, University of Maryland, 1925.

## PHYSIOLOGY

#### *Professor*

- Blake, William D., chairman; AB, Dartmouth College, 1940; MD, Harvard Medical School, 1943.
- Barraclough, Charles A., BS, St. Joseph's College, 1949; MS, Rutgers University, 1952; PhD, 1953.
- Mason, G. Robert, BA, Oberlin College, 1955; MD, University of Chicago, 1957; PhD, Stanford University, 1968.
- Pinter, Gabriel G., MD, University Medical School, Budapest, 1951.

#### *Associate Professor*

- Channing, Cornelia P., BA, Hood College, 1961; MA, Harvard University, 1963; PhD, 1965; ScD (honorary), Hood College, 1972.
- Fajer, Abram B., MD, University of Sao Paulo, 1951.
- Glaser, Edmund M., BEE, The Cooper Union, 1949; MSE, Johns Hopkins University, 1954; DEng, 1960.
- Goldman, Lawrence, BS, Tufts University, 1958; PhD, Columbia University, 1964.

- Greisman, Sheldon E., MD, New York University, 1949.
- Karpeles, Leo M., BS, University of North Carolina, 1941; MD, University of Washington, 1955.
- Merlis, Jerome K., BS, University of Louisville, 1933; MD, 1937; MS, 1938.
- Ruchkin, Daniel S., BE, Yale University, 1956; ME, 1957; DEng, 1960.

#### *Assistant Professor*

- Blaumanis, Otis R., BA, Johns Hopkins University, 1965; PhD, 1970.
- Fertziger, Allen P., BS, City College of New York of the CUNY, 1963; PhD, University of Michigan, 1968.
- Jurf, Amin N., BA, Western Maryland College, 1959; PhD, University of Maryland, 1966.
- Kerr, H. David, BA, Maryville College, 1951; MD, Temple University, 1955.
- Turgeon, Judith L., BA, Washburn University, 1965; PhD, University of Kansas, 1969.
- Urbaitis, Barbara K., BA, Hunter College, 1960; MA, 1965; PhD, Cornell University, 1968.

#### *Emeritus*

- Smith, Dietrich C., PhD, Harvard University, 1928.

## PSYCHIATRY

#### *Professor*

- Brody, Eugene B., chairman and director (on leave to July 1, 1974), Institute of Psychiatry and Human Behavior; AB, MA, University of Missouri, 1941; MD, Harvard Medical School, 1944.
- Monroe, Russell R., acting chairman; BS, Yale University, 1942; MD, 1944.
- Bartmeier, Leo, BA, Catholic University of America, 1914; MA, 1916; MD, Georgetown Medical School, 1920.\*
- Friedman, Stanford, psychiatry and human development; BA, Antioch College, Yellow Springs, Ohio, 1953; MD, University of Rochester, 1957.
- Grenell, Robert G., neurobiology; BS, College of the City of New York, 1935; MS, New York University, 1936; PhD, University of Minnesota, 1943.
- Kubie, Lawrence S., AB, Harvard College, 1916; MD, Johns Hopkins University, 1921.\*
- Siegmán, Aron W., clinical psychology; BA, City College of New York, 1952; MS, University of Wisconsin, 1954; PhD, Columbia University, 1957.\*
- Weintraub, Walter, BA, New York University, 1948; MD, University of Geneva, 1951.

#### *Associate Professor*

- Ascher, Eduard, BS (Med. Sc.), Washington University, 1942; MD, 1942.\*
- Balis, George U., MD, National University of Athens, 1954.

- Clemmens, Raymond L., BS, Loyola College, 1947; MD, University of Maryland, 1951.\*
- David, Henry P., psychology; BA, University of Cincinnati, 1948; MA, 1949; PhD, Columbia University, 1951.\*
- Derbyshire, Robert L., sociology; BS, University of Maryland, 1954; MA, 1959; PhD, 1964.\*
- Donner, Lawrence, clinical psychology; BA, Rutgers University, 1962; MS, 1965; PhD, 1967.
- Gibson, Robert Q., MD, University of Pennsylvania School of Medicine, 1948.\*
- Gould, Norman, AB, Pomona College, 1948; MS, University of Southern California, 1949; PhD, Florida State University, 1961.\*
- Gross, Herbert S., BA, Yeshiva College, 1956; MD, Albert Einstein College of Medicine, 1960.
- Huffer, Virginia, BS, University of Maryland, 1940; MD, 1950.
- Lisansky, Ephraim, T., AB, Johns Hopkins University, 1933; MD, University of Maryland, 1937.\*
- Lynch, James J., psychology; BS, Boston College, 1962; MA, Catholic University, 1964; PhD, 1965.
- Mackie, James B., clinical psychology; BA, University of Utah, 1955; MA, 1957; PhD, 1963.
- Modarressi, Taghi M., MD, University of Tehran, 1959.
- Newman, Ruth G., BA, Rutgers University, 1937; MA, George Washington University, 1952; PhD, University of Maryland, 1958.\*
- Pepper, Bertram, MS, Columbia University, 1954; BA, City College of New York, 1953; MD, New York University College of Medicine, 1957.\*
- Rappeport, Jonas R., BS, University of Maryland, 1948; MD, 1952.\*
- Roseman, Morris, clinical psychology; BS, University of Maryland, 1942; BA, 1943; PhD, Duke University, 1949.\*
- Sakles, Constantine J., AB, University of Rochester, 1955; MD, Yale University, 1959.
- Savage, Charles, BA, Yale University, 1939; MS, University of Chicago, 1943; MD, 1945.\*
- Schnaper, Nathan, BS, Washington College, 1940; MD, University of Maryland, 1949.\*
- Scratton, Joan M., BA, University of Melbourne, 1963; MSW, Smith College of Social Work, 1965.
- Styrt, Jerome, BS, University of Chicago, 1940; MD, 1945.\*
- Teplitz, Zelda, BA, University of Chicago, 1938; MD, University of Illinois College of Medicine, 1942.\*
- Tuerk, Isadore, BS, Johns Hopkins University, 1930; MD, University of Maryland, 1934.\*
- Wurmser, Leon, MD, University of Zurich, 1955.

#### *Assistant Professor*

- Albright, Mary J., clinical psychology; BA, St. Mary of the Springs College, 1954; MA, Fordham University, 1956; PhD, 1966.
- Ault, Virginia Lee, RN, Union Memorial Hospi-



- tal, 1945; MS, University of Maryland, 1950; MD, University of Vermont College of Medicine, 1959.
- Barry, Ronald M., MD, Melbourne University, 1963.\*
- Beran, Bohumil R., MD, Charles University Medical School, Prague, Czechoslovakia, 1964.\*
- Boslow, Harold, MD, University of Virginia School of Medicine, 1939.\*
- Bosma, Willem G.A., MD, University of Amsterdam, 1950.
- Bradford, Norman H., clinical psychology; BA, University of Minnesota, 1956; PhD, 1964.
- Brown, George P., BS, Howard University, 1940; MD, 1944.\*
- Brown, Robert M., psychologist; BA, Princeton University, 1947; MA, 1950.
- Cimonetti, Thomas C., BA, St. Michael's, 1955; MD, University of Maryland, 1965.
- Cohen, George M., BSc, University of Pittsburgh, 1966; MSc, 1963.
- Cohen, Irvin H., BA, Johns Hopkins University, 1944; MD, University of Maryland, 1947.\*
- Davis, Nathan, BA, University of Chicago, 1950; MD, 1957.\*
- Dixon, William R., AB, Princeton University, 1940; MD, Johns Hopkins University, 1944.\*
- Donahoe, Kay, psychiatric social work; MSW, Catholic University of America, 1960.
- Dubin, Samuel, BA, Washington Square College, 1950; MD, Faculty of Medicine, University of Leiden, Leiden, The Netherlands, 1957.\*
- Eichler, Myron, BS, Tulane University, 1950; MD, New York College, 1954.\*
- Fiedler, Kurt R., University of Berlin, 1949; MD, 1953.\*
- Fitzpatrick, William W., BS, Mercer University, 1941; MD, Emory University, 1944.\*
- Gallahorn, George E., BS, Georgetown University, 1962; MD, University of Maryland, 1966.
- Glaser, Kurt R., MD, University of Lausanne, 1939; MSc (pediatrics), University of Illinois College of Medicine, 1948.\*
- Godenne, Ghislaine D., child psychiatry; BS, University of Louvain, Belgium, 1948; MD, 1952.
- Gordon, Bernard S., AB, University of Michigan, 1937; MD, University of Louisville, 1942.\*
- Gray, Sheila Hafter, BA, Brooklyn College, 1950; MA, New School of Social Research, 1954; MD, Harvard Medical School, 1958.\*
- Harris, William M., AB, University of West Virginia, 1941; MD, University of Maryland, 1943.\*
- Holden, William, BS, Marquette University, 1948; MD, 1952.\*
- Hulfish, Barbara, neurology; BA, American University, 1944; MD, University of Rochester, 1952.\*
- Hunt, Gerard, sociology; BS, Fordham University, 1959; MA, Emory University, 1962; PhD, University of North Carolina, 1969.
- Jantz, Eleanore M., clinical psychology; BA, Northwestern University, 1953; MA, 1957; PhD, 1959.
- Johnston, Daniel F., AB, Princeton University, 1952; MD, University of Maryland, 1956.\*
- Jones, Norma, psychiatric social work; AB, Morgan State College, 1957; MSW, Howard University, 1965.
- Kaiser, Theodore N., BS, Johns Hopkins University, 1945; MD, 1949.\*
- Lamb, Arthur C., AB, Brown University, 1959; MD, University of Maryland, 1963.\*
- Lasson, Morris L., psychology; BA, Ner Israel College, 1960; MA, Loyola College, 1962; PhD, Catholic University, 1966.\*
- Lloyd, Dee, BA, University of Utah, 1956; MA, 1958; PhD, Ohio State University, 1961.\*
- Lion, John R., AB, Harvard College, 1960; MD, Albany Medical College of Union University, 1965.
- Lynch, Thomas, MB, BCh, University College of Dublin, Ireland, 1947; DPM, National University of Ireland, 1950.\*
- Magruder, William W., BS, Mississippi State College, 1942; MD, Duke University, 1944.\*
- Maxwell, Anabel, psychiatric social work; AB, University of Maryland, 1933; MSW, University of Pennsylvania, 1938.
- McDaniel, Ellen, MD, University of Michigan, 1966.
- Mott, Thurman, Jr., BS, Northwestern University, 1950; MD, 1952.
- Mourat, Stephen, AB, West Virginia University, 1941; MD, Jefferson Medical College, 1944.\*
- Nospitz, Joseph D., BA, University of Louisville, 1943; MD, 1945.\*
- Olsson, James E., clinical psychology; BS (psychology), University of Maryland, 1959; MA, Catholic University 1967.\*
- Paskewitz, David, psychology; BA, University of Minnesota, 1963; MS, University of Oklahoma, 1965; PhD, 1967.
- Penna, Manoel, premedical, Colegro Estadual Paes de Cavalho Brasil, 1955; MD, University of Para, Brazil, 1961.
- Plaut, Michael, BA (psychology), Adelphia University, 1965; PhD, University of Rochester, 1968.
- Press, Leonard, psychiatric social work; BA, Johns Hopkins University, 1952; MSSA, Western Reserve University, 1957.\*
- Reed, Julian W., BS, University of Maryland, 1948; MD, 1952.\*
- Robinson, Kent E., BA, University of Cincinnati, 1943; MD, 1952.\*
- Sarles, Richard M., BS, Georgetown University, 1957; MD, University of Maryland, 1961.
- Schonfield, Jacob, clinical psychology; BA, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.\*
- Schweig, Noel, BA, Wesleyan University, 1951; MD, Duke University, 1956.\*
- Shapiro, Solomon, clinical psychology; BS, Towson State College, 1942; MA, Johns Hopkins

- University, 1948; PhD, University of Maryland, 1952.\*
- Shochet, Bernard, medicine; BS, University of Maryland, 1952; MD, 1954.\*
- Sila, Basri, BS, College of Saint Michael, Istanbul, Turkey, 1950; MD, University of Istanbul, Turkey, 1956.\*
- Ulgur, Ulku, MD, University of Istanbul, 1959.
- Veiga, Mariano, MD, Barcelona University, 1945.\*
- Von Muehlen, Lutz, BS, University of Frankfurt, 1954; MD, University of Munich, 1958.
- Weinstein, Stanley, psychiatric social work; BA, University of Maryland, 1965; MSW, 1968.
- Weir, Douglas W., AB, St. John's College, 1958; MD, University of Maryland, 1964.
- Weisman, Maxwell N., BA, City College of New York, 1930; MA, Columbia University, 1931; MD, University of Amsterdam, 1958.\*
- Instructor*
- Arana, Jose, MD, Universidad Peruana Cayetano Heredia, 1967.
- Armstrong, Judith, clinical psychology; BA, Brooklyn College, 1962; PhD, University of California, 1968.
- Arnold, William H., MD, University of Rochester, 1957.\*
- Azcarate, Carlos, MD, Universidad Peruana Cayetano Heredia, 1968.
- Becker, Rheda E., BA, University of Maryland, 1956; MA, 1957.\*
- Berman, Merrill I., BA, Johns Hopkins University, 1958; MD, University of Maryland, 1962.\*
- Bisco, Michael J., AB, Yale University, 1951; MD, Western Reserve University, 1955.\*
- Boza, Ramon A., MD, Havana Medical School, 1955.\*
- Carver, Patricia N., psychology; AB, Wellesley College, 1955; Cert. Prop., University of Geneva, Switzerland, 1956; MA, Clark University, 1958; PhD, 1961.\*
- Cicci, Regina, BS, Kent State University, 1960; MA, Northwestern University, 1961.\*
- Connor, Huell E., Jr., BS, Texas A&M University, 1958; MA, University of Texas, 1960; MD, 1964.\*
- Croce, Giovanni C., MD, University of Rome, 1946.\*
- Dvoskin, Philip, BS, University of Maryland, 1967; MD, 1966.\*
- Fetterhoff, L. Ira, BA, Carroll College, Waukesha, Wis., 1951; MDIV, Philadelphia Divinity School, 1954; MD, University of Maryland, 1967.\*
- Finn, Rolf B., MD, ChB, University of Otago N.Z., 1950; DPM, Conjoint Examining Board of England, 1957.\*
- Fleming, Barbara J., psychiatric social work; BA, Coppin State College, 1968; MSW, University of Maryland, 1970.
- Freinek, Wilfred R., MD, Innsbruck University, University of Austria, 1953.\*
- Frieman, Robert D., AB, University of California, 1960; MD, 1965.\*
- Genut, Kate L., psychiatric social work; BA, University of Maryland, 1968; MSW, 1970.
- Hamilton, John, BA, Pacific Union College, 1943; MD, Howard University, 1951.\*
- Holder, W. Lewis, AB, Emory University, 1949; MD, University of Maryland, 1953.\*
- Jencks, Stephen F., AB, Harvard College, 1962; MD, 1967.\*
- Kohn, Nancy, psychology; BA, Oberlin College, 1965; PhD, University of Chicago, 1971.
- Levy, Stevan M., clinical psychology; BA, Johns Hopkins University, 1966; MA (equivalency), 1967.\*
- Lewis, Harvey A., BS, Manhattan College, 1952; MD, Georgetown University, 1956.\*
- Logue, Andrew D., BS, Yale University, 1960; MD, Johns Hopkins University, 1964.\*
- McLaney, Martha, psychiatric social work; BA, Towson State College, 1967; MSW, University of Maryland, 1968.
- Millan, Carlos, MD, Javeriana University, 1966.
- O'Donnell, James J., alcoholism counseling project.
- Oppenheimer, Ruth, child therapy; BA, University of London, 1953.\*
- Reidy, Joseph J., MD, Loyola University, Chicago, 1948.\*
- Roberts, Randy, clinical psychology; BA, University of Pennsylvania, 1967; MA, University of Maryland, 1970; PhD, 1971.\*
- Robinson, Lisa, RN, University of Maryland, 1959; BSN Ed., American University, 1961; MS, University of Maryland, 1965; PhD, Union Memorial Hospital, 1970.\*
- Salisbury, Thomas A., psychiatric social work; BS, Union College, 1965; MSW, University of Maryland, 1968.\*
- Schreder, Richard H., psychiatric social work; BA, University of Notre Dame, 1966; MSW, University of Maryland, 1972.
- Schulz, Clarence, MD, Washington University, 1945.\*
- Schwartz, Lloyd, BA, Pennsylvania State University, 1947; MS, 1947; PhD, American University, 1967.\*
- Smith, James E., II, AB, Union College, 1944; MD, University of Pennsylvania, 1951.\*
- Steinbach, Irvin L., clinical psychology; BS, University of Maryland, 1953; MA, George Washington University, 1966.\*
- Trattner, Robert E., DDS, Western Reserve University, 1945; AB, 1947; MD, University of Chicago, 1951.\*
- Vauls, Kersley, BS, Morgan State College, 1958.
- Weinstein, Gerald E., BA, Syracuse University, 1949; MD, 1954.\*
- Weinstock, Joseph S., BA, University of Maryland, 1956; MD, 1965.\*
- Wilson, Sherwood E., BS, Columbia University, 1959; MD, University of Maryland, 1964.\*
- Wise, Samuel P., III, MA, Emory University, 1941; MD, Tulane University, 1946.\*



## RADIOLOGY

### *Professor*

- Dennis, John M., chairman; BS, University of Maryland, 1943; MD, 1945.  
 Angell, Franklin L., BS, University of Virginia, 1943; MD, Medical College of Virginia, 1947.  
 Davidson, Charles N., MD, University of Virginia, 1938.\*  
 Lyon, James A., Jr., AA, Princeton University, 1944; MD, Long Island College of Medicine, 1947.\*  
 Wizenberg, Morris J., MD, University of Toronto, 1953.

### *Associate Professor*

- Ayella, Robert J., MD, University of Pennsylvania, 1949; MSc (medicine), 1953.  
 Knox, Gaylord S., MD, Tulane University, 1951.\*  
 Robinson, James E., BS, Utah State Agricultural College, 1947; MA, Washington University, 1949; PhD, 1955.

### *Assistant Professor*

- Diaconis, John N., BS, University of Maryland, 1955; MD, 1961.  
 Dinker, Robert E., BS, University of Maryland, 1958; MD, 1963.\*  
 Edelsack, Edgar, MS, University of Southern California, 1949.\*  
 Hyman, Nathan B., MD, University of Maryland, 1946.\*  
 Kusakull, Anant, BS, Chulalongkorn University, Bangkok, 1954; MD, University of Medical Sciences and Siriraj Hospital, Bangkok, 1957.  
 Nilprabhassorn, Prasarn, BS, University of Medical Sciences, Bangkok, 1956; MD, University of Medical Sciences and Siriraj Hospital, 1960.  
 Sanwalani, Shankar, BS, Jai Hind College, Bombay, India, 1961; MD, Seth G.S. Medical College, University of Bombay, 1965.  
 Slawson, Robert, BS, Morningside College, Sioux City, Iowa, 1958; MD, State University of Iowa College of Medicine, 1962.  
 Weiner, Seymour, BS, City College of New York, 1956; MD, Albert Einstein School of Medicine, 1961.  
 Wipfelder, Rosemarie, BS, Massachusetts Institute of Technology, 1965; MS, Harvard University, 1970.

### *Instructor*

- Andelman, Samuel M., BS, Chicago State University, 1960; MD, Chicago Medical School, 1964.\*  
 Borrelli, Neil J., AB, Franklin and Marshall College, 1962; MD, New York Medical College, 1968.  
 Campbell, H. James, BS, University of Maryland, 1959; MD, 1963.\*  
 Kim, Ryun H., BS, Kyung-Pook National University, 1950; MD, 1954.\*

- Lewis, Henry S., AB, Princeton University, 1955; MD, University of Virginia, 1959.\*  
 Snyder, Larry A., BS (pharmacy), University of Maryland, 1960; MD, 1965.\*  
 Stofberg, Nathan, BS, University of Maryland, 1956; MD, 1960.\*  
 Thomas, William N., MD, University of Virginia, 1942.\*  
 Wallop, William H., AA, Princeton University, 1949; MD, Columbia University, 1949.\*

## REHABILITATION MEDICINE

### *Professor*

- Richardson, Paul F., chairman; MD, University of Maryland, 1950.  
 Cohen, B. Stanley, MD, University of Maryland, 1947.\*

### *Associate Professor*

- Fleischer, Clara J., MS (pharmacy), University of Prague, Czechoslovakia, 1932; MD, Medical College of Virginia, 1942.\*  
 Gessner, John E., BS, Loyola College, 1950; MD, University of Maryland, 1954.  
 Goldfine, Lewis J., MBBS (MD), Kings College and Hospital, University of London, England, 1960; DPhysMed, 1967.  
 Raab, Kurt, MD, Medical School of the University of Vienna, Austria, 1955.\*  
 Schonfield, Jacob, BS, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.

### *Assistant Professor*

- Balsam, Frederick J., BS, College of the City of New York, 1931; MD, University of Lausanne, Switzerland, 1938.\*  
 Elwood, Lawrence K., AB, West Virginia Wesleyan College, 1966; MEd, University of Maryland, 1968.  
 Hendry, Marjorie H., BS, University of Minnesota, 1941; MD, Women's Medical College, 1953.  
 Lentz, George A., Jr., BA, Johns Hopkins University, 1953; MD, University of Maryland, 1957.

### *Instructor*

- Carter, Gordon C., BS, Morgan State College, 1958; MD, Meharry Medical College, 1963.  
 Felsenthal, Gerald, BA, New York University, 1963; MD, Albany Medical College, 1967.  
 Furnary, Joseph C., BS, University of Pittsburgh, 1938; MD, University of Maryland, 1942.  
 Rosen, Norman B., BA, Johns Hopkins University, 1959; MD, University of Maryland, 1963.  
 Urusky, Walter, AB, New York University, 1938; MD, Marquette University, 1942.  
 Weiss, Thomas, psychology; BA, Rutgers University, 1966; MS, North Carolina State, 1969; PhD, 1971.

## SOCIAL AND PREVENTIVE MEDICINE

### *Professor*

- Henderson, Maureen, chairman; MBBS, Durham University, England, 1949; DPH, 1956.  
 Entwisle, George, BS, University of Massachusetts, 1945; MD, Boston University, 1946.  
 Klimt, Christian R., MD, University of Vienna, 1944; MPH, Johns Hopkins University, 1952; DrPH, 1959.  
 Meinert, Curtis L., BS, University of Minnesota, 1956; MS, 1959; PhD, 1964.  
 Tayback, Matthew, AB, Harvard College, 1929; MA, Columbia University, 1940; ScD, Johns Hopkins University, 1953.\*

### *Associate Professor*

- Alexander, C. Alex, MBBS, University of Madras, 1958; MPH, Johns Hopkins University, 1964; DrPH, 1966.\*  
 Barrett, Harle V., BS, Oklahoma A&M College (Oklahoma State University), 1940; MS, Kansas State College, 1942; MD, University of Kansas, 1946; MPH, Harvard University, 1950.  
 Berman, Joseph, BA, Clark University, 1957; MD, Tufts University, 1961; MPH, Johns Hopkins University, 1968.\*  
 Canner, Paul L., BA, University of Minnesota, 1960; MS, 1962; PhD, 1966.  
 Hebel, J. Richard, BS, Virginia Polytechnic Institute, 1962; PhD, 1965.  
 Kessler, Irving J., AB, New York University, 1952; MA, Harvard University, 1955; MD, Stanford University, 1960; MPH, Columbia University, 1962; DrPH, Harvard University, 1968.\*  
 Knatterud, Genell L., BA, Macalester College, 1952; MS, University of Minnesota, 1959; PhD, 1963.  
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 Reed, Julian W., BS, University of Maryland, 1948; MD, 1952.\*  
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 Tominaga, Suketami, MS, Osaka University, Japan, 1962; DMSC, 1967; MPH, Johns Hopkins University, 1970.  
 Warbasse, James R., BA, Princeton University, 1948; MD, Harvard Medical School, 1954.\*

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- Apostolides, Aristide Y., DVM, National Veterinary School of Toulouse, France, 1963; PhD, University of North Carolina, 1970.  
 Go, Howard T., PhD, University of Technology, Delft, The Netherlands, 1958.\*  
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- Kassel, Leon, MD, University of Virginia, 1949.\*  
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 List, Noel D., BA, New York University, 1960; MD, State University of New York, Downstate, 1965; MPH, Harvard University, 1967.  
 McDill, Mary S., BS, University of Alabama, 1956; PhD, Johns Hopkins University, 1970.  
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 Vogel, F. Philip, BA, Catholic University, 1965.\*

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 Crosby, Robert M.N., MD, University of Maryland, 1943.  
 Flotte, C. Thomas, BS, Franklin and Marshall College, 1943; MD, Jefferson Medical College, 1946.  
 Hull, Harry C., MD, University of Maryland, 1932.\*  
 McLaughlin, Joseph S., Loyola College, 1954; MD, University of Maryland, 1956.  
 Morgan, T.H., MB, Cambridge University, 1943; MB, BChir, 1948.  
 Mosberg, William H., Jr., BS, University of Maryland, 1942; MD, 1944.  
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 Smith, Gardner W., AB, Princeton University, 1969; MD, Harvard Medical School, 1956.\*



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 Hubbard, T. Brannon, Jr., BA, Princeton University, 1938; MD, Columbia University, 1942; PhD (surgery), University of Minnesota, 1952.\*  
 Johnson, Robert H., Jr., BA, Duke University, 1954; MD, University of Maryland, 1958.  
 Michael, Roger H., BA, Oberlin College, 1953; MD, Western Reserve University, 1957.  
 Miller, John E., BA, Pennsylvania State University, 1938; MD, Jefferson Medical College, 1942.  
 Ollodart, Robert M., BA, University of Buffalo, 1955; MD, 1956; PhD (microbiology), University of Maryland, 1971.  
 Schmeisser, Gerhard, AB, Princeton University, 1949; MD, Johns Hopkins University, 1953.\*  
 Tansey, John J., AB, Brown University, 1942; MD, University of Maryland, 1945.\*  
 Turney, Stephen Z., MD, Georgetown University, 1959.

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Baker, Dole P., BA, Harvard College, 1961; MD, Jefferson Medical College, 1965.\*  
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 Cherry, Jerrie, BA, University of Virginia, 1951; MD, Johns Hopkins University, 1955.  
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 Diamond, Liebe S., BA, Smith College, 1951; MD, University of Pennsylvania, 1955.  
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 Greenstein, George H., BA, Johns Hopkins University, 1941; MD, University of Maryland, 1950.  
 Herrmann, Raymond W., BA, University of Illinois, 1941; MD, St. Louis University, 1946.  
 Isaacs, Benjamin H., BA, Johns Hopkins University, 1932; MD, University of Maryland, 1936.  
 Lynn, William D., BA, Princeton University, 1940; MD, Johns Hopkins University, 1943.\*  
 Kramer, Howard C., MD, University of Maryland, 1951.  
 Mays, Howard B., MD, University of Maryland, 1935.  
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 Mendoca, Paulo P., MD, University of Recife, Brazil, 1952.  
 Minken, Stanley L., BS, University of Maryland, 1958; MS, George Washington University, 1959; MD, University of Maryland, 1963.\*  
 Novin, Neil, BA, New York University, 1951; MD, State University of New York, 1955.  
 Paul, Ronald L., AB, Gettysburg College, 1959; MDCM, McGill University, 1963.  
 Ramp, Jeremy M., BA, Indiana University, 1963; MD, 1966.  
 Reichmister, Jerome P., BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.  
 Rever, William B., Jr., MD, University of Maryland, 1950.\*  
 Schneider, Richard J., BA, University of Chicago, 1966, PhD (neuropharmacology), University of Pittsburgh, 1972.  
 Sharrett, John O., MD, University of Maryland, 1952.  
 Singer, John A., BA, Cornell University, 1963; MD, State University of New York, Downstate Medical Center, 1967.  
 Sothoron, W. Haddox, BS, Juniata College, 1958; MD, University of Maryland, 1962.  
 Sterioff, Sylvester, BA, Harvard University, 1959; MD, Washington University School of Medicine, St. Louis, 1963.\*  
 Suter, Charles M., BSEE, Drexel Institute, 1964; PhD (physiology), University of Maryland, 1969.  
 Weiner, Israel, H., BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.  
 Wenzlaff, Edward F., BA, Columbia College, 1948; MD, University of Buffalo, 1954.  
 Urban, Beth J., BA, Arizona State University, 1958; MA, University of Maryland, 1963; PhD, 1968.

#### *Instructor*

Barrick, Donald M., BA, George Washington University, 1958; MD, University of Maryland, 1962.

- Belcher, H. Vaughn, BA, University of Virginia, 1948; MD, Medical College of Virginia, 1952.
- Beyer, Otto C., BS, Loyola College, 1951; MD, University of Maryland, 1955.
- Blumberg, Joan L., BS, Towson State College, 1970; MS, Pennsylvania State University, 1971.
- Breschi, Louis C., BS, Loyola College, 1958; MD, University of Maryland 1962.
- Clayton, Marco, BS, Union College, 1954; MD and PhD (hematology), Johannes Gutenberg, Germany, 1964.
- Clark, Francis A., Jr., MD, University of Maryland, 1961.
- Cohen, Edward R., BS, University of Maryland, 1963; MD, 1967.\*
- Cunningham, Raymond M., BA, Loyola College, 1935; MD, University of Maryland, 1939.
- Decker, J. Scott, BS, University of Illinois, 1957; MD, 1961.
- Doyle, Robert L., BS, Loyola College, 1959; MD, University of Maryland, 1964.
- Engnoth, Milton I., BS, University of Maryland, 1953; MD, 1957.
- Generous, Thelma H., BA, State University of Iowa, 1950; MS, University of Pittsburgh, 1952.
- Goldstein, Robert B., MD, University of Maryland, 1954.
- Gudwin, Arthur L., BS, Tufts University, 1959; MD, 1963.
- Henderson, Charles M., BS, University of Maryland, 1955; MD, 1957.
- Hennessy, Robert G., BS, Holy Cross College, 1956; MD, Georgetown University, 1960.
- Howard, Ralph M., BS, Morgan State College, 1955; MD, Howard University, 1959.
- Hudson, Paul C., AB, Princeton University, 1947; MD, University of Maryland, 1955.
- Layne, Edward, BS, Ohio State University, 1961; MD, 1965.
- Meyer, Paul D., BS, George Washington University, 1956; MD, University of Maryland, 1960.
- McHold, David S., BS, Moorehead University, 1962; MD, University of Maryland, 1967.
- Natale, Ralph D., BA, Johns Hopkins University, 1955; MD, University of Maryland, 1959.
- Otenasek, Frank J., BA, Loyola College, 1933; MD, Johns Hopkins University, 1937.
- Powder, James R., BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.
- Ritchie, George F., BS, Manhattan College, 1962; MD, Creighton University, School of Medicine, Omaha, Nebraska, 1966.
- Rosell, Luis A., MD, University of Seville, Spain, 1952.
- Rudo, Alvin D., BA, Johns Hopkins University, 1943; MD, University of Maryland, 1945.
- Russo, G. Lee, BA, Loyola College, 1955; MD, University of Maryland, 1959.
- Sapre, Arun B., MB, BS, Medical College, Nagpur University, India, 1960.
- Snyder, Jerome, PhD, University of Maryland, 1928; BS, 1930; MD, 1932.
- Spence, Kenneth F., BS, Washington and Lee University, 1953; MD, University of Maryland, 1957.
- Sugar, Fred N., BS, University of Maryland, 1961; MD, 1965.
- Tountas, Chris P., BS, University of Maryland, 1958; MD, 1963.
- White, John P., III, MD, University of Maryland, 1947.
- Will, David R., MD, University of Maryland, 1943.\*
- Emeritus*
- Coblentz, Richard G., BA, Johns Hopkins University, 1914; MD, 1918.
- Toulson, W. Houston, MD, University of Maryland, 1913.
- Voshell, Allen F., BA, Johns Hopkins University, 1915; MD, 1919.
- Yeager, George H., BS, University of West Virginia, 1927; MD, University of Maryland, 1929.\*\*

## HEALTH SCIENCES LIBRARY

- Moore, Hilda E., librarian and associate professor of library science; AB, Randolph-Macon Woman's College, 1936; ABLS, Emory University Library School, 1937.†
- Coyle, Edith M., assistant librarian for technical services; AB, University of North Carolina, 1937; ABLS, 1939; MA, Johns Hopkins University, 1945.†
- DeMange, Kathryn K., head, acquisitions; BA, Fresno State College, 1954; MLS, University of Maryland, 1967.†
- Dorfler, Melayn, head, documents; BS, Denison University, 1963; AMLS, University of Michigan, 1965.†
- Hanna, Ruth E., information and public relations officer; AB, Hanover College, 1939; MSLS, Catholic University, 1961.
- Jones, Margaret M., head, cataloging; AB, Shaw University, 1947; MSLS, Atlanta University School of Library Science, 1951.
- Listfeldt, Hans-Guenther R., head, serials; BS, Loyola College, 1956; MSLS, Catholic University, 1961; PhL, 1967.
- Listfeldt, Mary S., head, reference; BA, New York State College for Teachers, Albany, 1944; BLS, University of Wisconsin, 1947; MSLS, Catholic University, 1972.†
- Mitten, Eleanor M., assistant librarian for readers' service; BS, Cornell University, 1942; BSLS, Syracuse University School of Library Science, 1949.†
- Richards, Katherine M., historical librarian; BA, Marylhurst College, 1964; MLS, Indiana University, 1968; certificate, Johns Hopkins University Medical Library, 1969.

† certified medical librarian









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John H. Moxley, III, dean, School of Medicine; AB, 1957, Williams College; MD, University of Colorado, 1961.

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Daniel Thursz, dean, School of Social Work and Community Planning; BA, Queens College, 1948; MSW, Catholic University, 1955; DSW, 1959.







School of Medicine  
University of Maryland  
Baltimore, Maryland  
21201



# SCHOOL OF MEDICINE 1975-1977

UNIVERSITY OF MARYLAND AT BALTIMORE





*Lew Bush—Baltimore Sunpapers*

## **THE CAMPUS PLAN**

The University of Maryland at Baltimore is contributing substantially to the massive inner-city renewal project. Working within the city's plans for the new boulevards and parks, and its requirements for the preservation of historic areas, the development plan for the campus, formulated by a nationally known consulting firm, includes provision for additional classroom and parking facilities, library space, student activities and recreational areas, and appropriate landscaping. Acquisition of properties and construction of buildings involved in the first phase are currently under way.

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1975-1977  
Catalog  
for the  
School of Medicine

UNIVERSITY OF MARYLAND AT BALTIMORE





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† effective June 2, 1975

\*\* terminates June 30, 1975

†† effective July 1, 1975

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Errol L. Reese, BS, Fairmount State College, 1960; MS, University of Detroit, 1968; DDS, University of West Virginia, 1963.

### *Dean, School of Law*

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### *Librarian and Associate Professor of Library Science*

Hilda E. Moore

## SCHOOL OF MEDICINE ADMINISTRATION

### *Dean*

John M. Dennis, MD

### *Admissions*

Willard Allen, MD, Associate Dean

### *Affiliations*

Dennis K. Wentz, MD, Assistant Dean

### *Fiscal Affairs*

Gregory Handlir, Assistant Dean

### *Student Affairs*

Frederick J. Ramsay, PhD, Associate Dean and Director

Leonard Frank, PhD, Assistant Dean

Robert Harrell, Jr., PhD, Assistant Dean

Bernice Sigman, MD, Assistant Dean

Keith Smith, PhD, Assistant Dean

## CALENDAR

The School of Medicine is in the process of revising its curriculum. The phase-in aspect of the change requires that the calendars of the various years of instruction differ. Therefore, the following general calendar is to be considered subject to changes as required.

*First Semester Registration* — During the first week in September

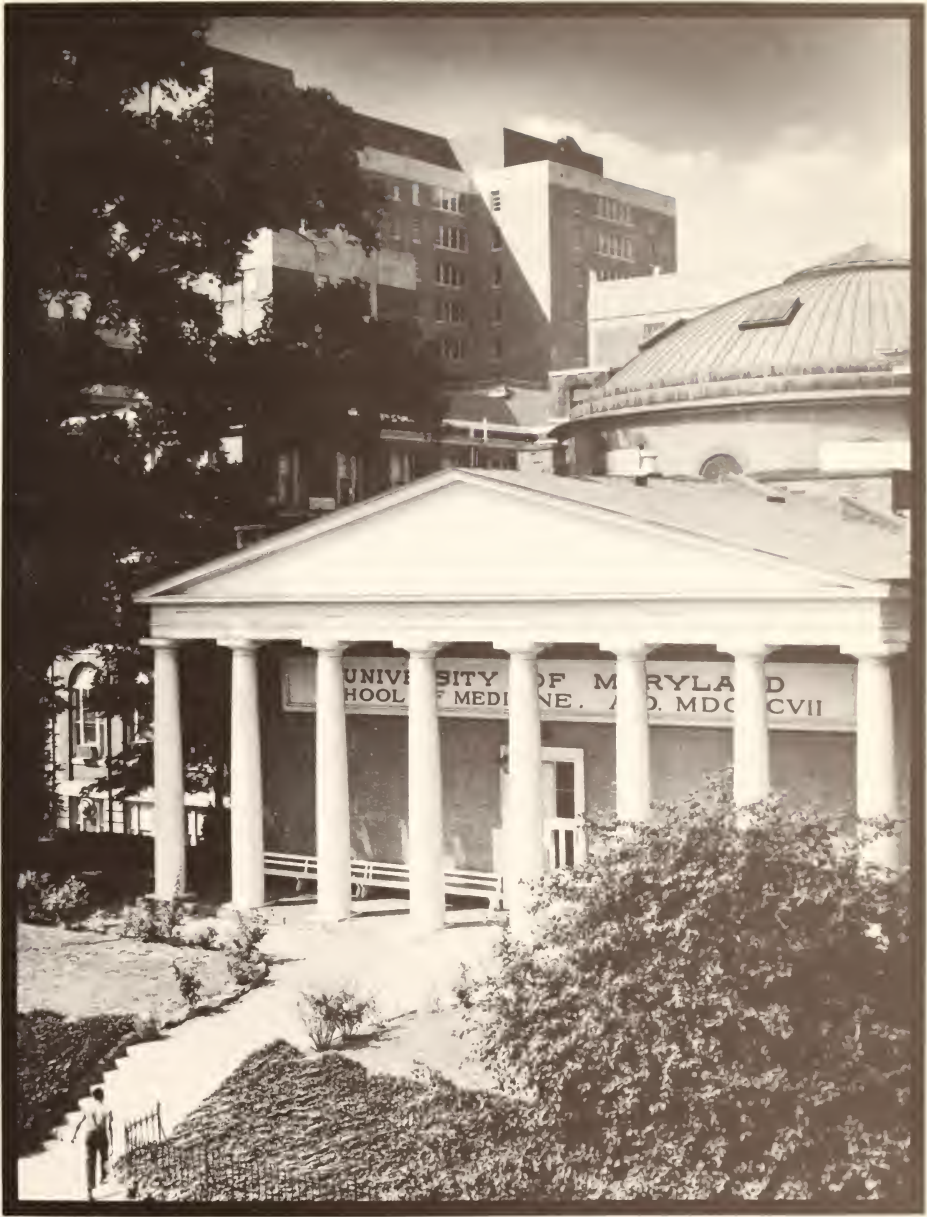
*Second Semester Registration* — During the third week in January

*Examination Periods* — Vary from year to year

*Scheduled Vacations* — Included for most classes are a Thanksgiving break, two-week recess at Christmas, George Washington's and Martin Luther King's birthday observances. In addition, a spring break may be included for some classes.

*Senior Graduation* — Last Friday in May (unless it conflicts with Memorial Day in which case graduation will be held the preceeding Thursday).

Each student, prior to matriculation and/or registration, will be provided with a calendar of dates as appropriate.



## HISTORY



The University of Maryland School of Medicine, the fifth medical school to be founded in the United States, was established in 1807 by the General Assembly of the State of Maryland. The principles upon which the school was established have not changed, as they were stated in the Founding Act: "Be It Enacted. . . That a College. . . by the name of The College of Medicine of Maryland, be established. . . upon the following fundamental principles. . . The said College shall be founded and maintained forever upon a most liberal plan, for the benefit of students of every country and every religious denomination, who shall be freely admitted to equal privileges and advantages of education, and to all the honors of the College, according to their merit, without requiring or enforcing any religious or civil tests."

A Board of Regents was selected, and Dr. John Beale Davidge, one of the founders, was appointed as the first Dean of the new school. Under his farsighted leadership, a new concept of medical education was formed: "The science of medicine could not be successfully taught under the usual organization of medical schools; that without the aids of physiology and pathology, either associated with anatomy or as a separate chair of institutes, the philosophy of the body in sickness or in health could not be understood."

At the end of 1807, a medical school existed in Baltimore with officers and faculty, but without buildings or funds. Dr. Davidge and his small faculty continued to teach in their own homes, as they had been doing prior to the official Founding Act. From the beginning, strong emphasis was placed on "bedside" teaching, with the first class of seven students receiving clinical instruction at the Baltimore Almshouse, a workhouse and infirmary for the poor. This emphasis has continued over the years, and the concept of direct patient contact remains important today.

Despite the school's financial difficulties, the first graduation was held in 1810, when the degree of Doctor of Medicine was conferred on five graduates.

A lottery was authorized to finance building, but it was largely due to the enthusiasm and dedication of early faculty members and interested Baltimore citizens that the College of Medicine was able to establish a campus. Land was donated by Col. John Eager Howard, of Revolutionary War fame. Located on the corner of Lombard and Greene streets, the lot had the distinct advantage of being on what was then the outskirts of town, away from areas where mobs were likely to form. At that time, the public was violently opposed to dissection of the human body, as Dr. Davidge was well aware, having had his own small anatomic theater destroyed several years previously by an angry mob.

The first building, now known as Davidge Hall, was constructed in 1812, and is the oldest building in the United States used continuously for medical education. Its architect, Robert Carey Long, Sr., used the Pantheon in Rome as his model for the building. Still used for teaching, Davidge Hall will eventually be fully restored to its original state and maintained as a medical museum.

In 1823, the Baltimore Infirmary, the forerunner of the University of Maryland Hospital, was built across from Davidge Hall. The school was one of the first in the country to build its own hospital for clinical instruction; and it was here that intramural residencies for senior students were first established. This building was still in active use until 1973, when all the clinics located there were moved into the new addition to the University of Maryland Hospital.

Through the years, there have been many "firsts" at the School of Medicine. One of the early faculty members, Dr. John Crawford, who had been the first to vaccinate Baltimoreans against smallpox in 1800, presented evidence as early as 1810 that tuberculosis was contagious. His personal library became the nucleus of the medical school library, one of the oldest in the country. In 1839, the Baltimore College

of Dental Surgery was incorporated, the first such school to be established in the world. The techniques of auscultation and percussion were taught here for the first time in America as early as 1841; and in 1844, Dr. David Stewart, the first professor of pharmacy in the United States, initiated his lectures at Maryland. From the beginning, the study of human anatomy was recognized as basic in medical education, but the public outcry and the difficulty in obtaining bodies limited dissection. Still, in 1848, Maryland became the first medical school to make anatomical dissection a required course. Six years later, compulsory courses in experimental physiology and microscopy were introduced. A milestone in cancer research occurred in 1853, when Dr. Francis Donaldson became the first person in America to advocate biopsy and microscopic diagnosis of malignancy. Maryland was the first to establish chairs in the diseases of women and children (1867), and diseases of the eye and ear (1873).

Mergers with the Baltimore Medical College in 1913 and the College of Physicians and Surgeons in 1915 provided the University of Maryland School of Medicine with greatly expanded faculty and clinical facilities. In 1920, the state university was established when the professional schools in Baltimore merged with the Maryland State College of Agriculture in College Park and the state assumed financial obligation for all the schools.

Today, the School of Medicine is part of a professional campus located on an area of 28 acres in downtown Baltimore. This campus, comprising the Schools of Dentistry, Law, Nursing, Pharmacy, Social Work and Community Planning, in addition to the University of Maryland Hospital, offers the medical student a unique opportunity to participate in the growing number of interdisciplinary educational programs carried out among the professional schools.

The school was integrated racially almost from its inception, and women were first admitted in 1921. In 1975, 119 of the 620 students were women.



## MEDICAL ALUMNI ASSOCIATION

"The alumni of the School of Medicine at the University of Maryland, desiring to further the interest and advancement of the University of Maryland School of Medicine and perpetuate the association made during the medical school period..." With this preamble to its constitution, the Medical Alumni Association has set forth to serve all graduates, students, faculty, staff and physicians affiliated with the School of Medicine.

The association maintains up-to-date addresses of all graduates and establishes contact with them throughout the year by various mailings. Class reunions are organized every five years and held in conjunction with Alumni Day and graduation.

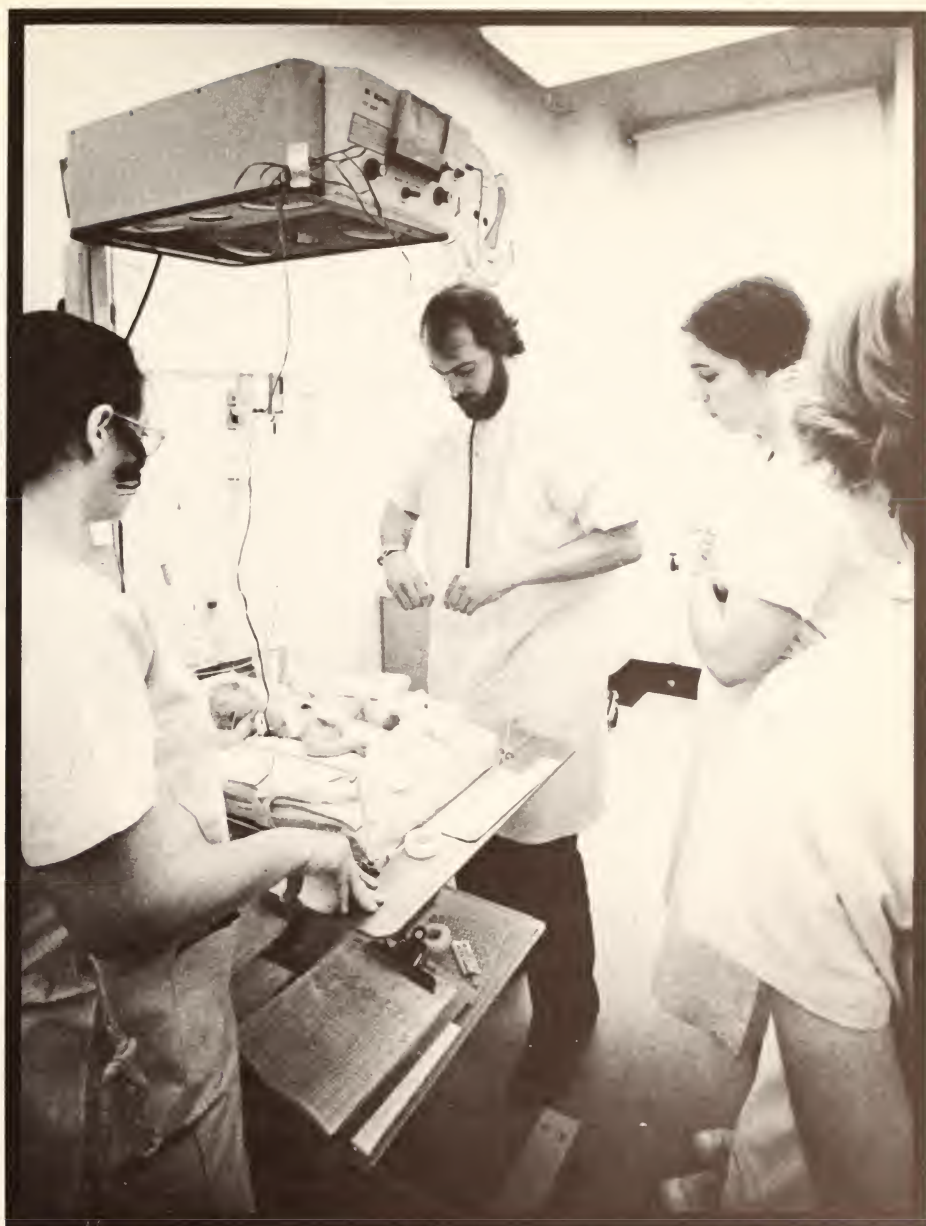
Alumni Day activities are planned to keep graduates and friends up to date on the medical school and professional trends as well as to maintain personal contact with other graduates. At that time, a general business meeting is conducted, a Board of Directors elected and approval sought of guidelines and actions to govern the group's activities for the upcoming year.

The most ambitious project of the Medical Alumni Association is the plan to restore Davidge Hall to its original state as built in 1812. The plan, which will take approximately five years to complete, will convert Davidge Hall into a "living artifact" — one which symbolizes the beginnings and continuity of higher education in the state of Maryland.

The alumni office also exists to help students currently attending the medical school. Through its small financial capability, student loans can be obtained.

Annual dues help to defray expenses of the Medical Alumni Association. Inquiries and participation in the association is solicited from all affiliated with the School of Medicine. For further information, write to the Medical Alumni Association, 201 Davidge Hall, 522 West Lombard Street, Baltimore, Maryland 21201.





## RESOURCES



## UNIVERSITY OF MARYLAND HOSPITAL

The University of Maryland Hospital, one of the oldest institutions for care of the sick in the state, is the primary teaching facility for the University of Maryland School of Medicine, and a major center for health care, medical education and research.

The original building, known as the Baltimore Infirmary, was built in 1823. The present main hospital was erected in 1933-34, with a capacity of 435 beds. In 1952-53, the Psychiatric Institute building was added as a junctional wing.

A modern, 13-story addition to the hospital was opened early in 1973, increasing the institution's capacity to 864 beds and 50 bassinets. With direct interconnections between the main hospital, the new addition and the Institute of Psychiatry and Human Behavior, the complex functions as one integrated facility.

The University of Maryland Hospital is the primary source of health care for more than 100,000 area residents. As the number of doctors, nurses and health care facilities has steadily decreased in the inner city, the hospital has assumed more and more responsibility for the total health care of the surrounding community. This is reflected in the rapidly-growing ambulatory patient load, estimated at nearly 300,000 combined emergency room and clinic visits for the next fiscal year.

The new addition houses all the ambulatory facilities of the hospital, including an expanded emergency suite, a screening clinic, a pediatric acute primary care unit, the Family Practice Program's Health Center, adult and pediatric specialty clinics, a primary care clinic directed by the Department of Social and Preventive Medicine, a new combined inpatient and outpatient adolescent unit, and many other expanded ambulatory services.

The new addition also provides space for new operation and recovery suites and expanded educational facilities, with approximately 100 seating spaces for teaching per floor.

A heliport adjacent to the main hospital permits rapid transportation of accident victims and other intensely ill patients to outstanding treatment in the Maryland Institute for Emergency Medicine. It also serves to speed sick newborns to the intensive care neonatal nursery.

In 1974 the Baltimore Cancer Research Center, an intramural program of the National Cancer Institute, moved to the hospital, occupying the entire ninth floor. The BCRC has conducted a multidisciplinary program in cancer research and therapy since 1967 at the U.S. Public Health Service Hospital, Wyman Park prior to the relocation. Their move is an important development in terms of education, also, because the BCRC professional staff teaches in the School of Medicine.

All hospital accommodations are a part of the teaching programs.

## AFFILIATIONS

The clinical facilities used in the teaching programs of the School of Medicine are numerous and varied in order to offer a broad spectrum of opportunities ranging from basic health care to complex medical problems requiring expensive, highly specialized facilities and staff.

Crucial to medical care in the seventies are the community hospitals in which the majority of primary and secondary level health care problems are seen. Recognizing these facts, the medical school has developed a network of institution-to-institution affiliations with community hospitals at three educational levels: undergraduate, graduate and postgraduate.

A closely-knit undergraduate affiliation exists with five community hospitals serving a wide range of patients in varied geographic settings. They are Maryland General, Mercy, Provident, South Baltimore General, and York (Pa.) hospitals. Each has made a major commitment toward being an area health education center, firmly believing that the end result of a teaching environment is better patient care. Central to this are programs devoted to the continuing education of all staff. In addition, all have well-developed graduate education programs which attract interns and residents who wish to train in a community hospital atmosphere. These hospitals have recruited fulltime educators in most departments, who hold academic appointments as fulltime faculty members and participate in activities of the medical school.

Closely linked with the University of Maryland Hospital are the Baltimore and Ft. Howard Veterans Administration hospitals. Within a few years the Baltimore Veterans Administration Hospital will be completely integrated with the medical school and located on this campus. Currently it is supervised by a dean's committee and the departments of medicine and pathology provide complete faculty and house-staff coverage.

Still other facilities are needed to complete the educational opportunities for physician training. Special programs involving one or more departments are conducted at Montebello State Hospital, a state rehabilitation and chronic care facility; the John L. Deaton Medical Center, a new extended care and rehabilitation facility; Baltimore City Hospitals, an acute care general hospital; Mount Wilson Hospital, a state tuberculosis facility; James L. Kernan Hospital, for children and adults with specialized orthopedic problems; the Sheppard-Pratt Hospital, a private psychiatric hospital; and Spring Grove and Rosewood, state mental health hospitals.



**Baltimore Veterans Administration Hospital.** The Veterans Hospital was constructed 22 years ago on a 15-acre campus located approximately three miles from the Johns Hopkins Medical Institutions and four miles from University of Maryland Hospital.

The mission of the hospital is to provide general medical and surgical care for eligible veterans and to operate a small, active drug treatment program and an outpatient clinic for service-connected problems. It is affiliated with the medical schools of both University of Maryland and Johns Hopkins University. The medical, laboratory, genitourinary surgery, drug treatment-psychiatric services are linked with the University of Maryland Hospital while the surgical service (including general, neuro, orthopedic and ophthalmic surgery) is associated with Johns Hopkins University School of Medicine. The radiology service is affiliated with both schools. All of the 47 fulltime and parttime staff plus 113 consultants and attending physicians are active faculty members of one of the medical schools.

The 40 interns and residents are selected by the medical schools and rotated for blocks of time to the University of Maryland or the Johns Hopkins hospitals as well as to the Baltimore Veterans Administration Hospital. In addition to medical students, nursing, social work and psychology students rotate through the hospital for portions of their training. The active and growing research program adds to the academic aspects of the environment.

The medical library contains 183 current periodicals, 3,137 books and monographs and obtains many inter-library loans from the two affiliated medical schools.

House officers and students from the various health science disciplines also rotate through the Ft. Howard Veterans Administration Hospital. This hospital emphasizes rehabilitation medicine and provides extended care for veterans recovering from serious illness or injury. A close-working relationship exists between the Baltimore and Ft. Howard Veterans Administration hospitals whose services complement each other.

**Maryland General Hospital.** As an institution which is constantly growing and expanding since it was founded in 1883, the hospital offers a broad range of modern facilities and equipment designed to meet the health needs of downtown metropolitan Baltimore. Through the years, Maryland General has expanded from a capacity of 50 beds to its present bed complement of 428, plus 25 bassinets.

The present hospital began in 1946 when the people of Baltimore contributed funds for a new building program. In 1956, the first major unit of seven floors was dedicated. In 1961, a nurses' home was built and in 1962, another major unit of the hospital was completed. A seven-story eye, ear, nose and throat wing was finished in December, 1968.

The EENT wing houses the central supply room, pharmacy, pediatric department and a coronary and intensive care unit. The special care unit contains 13 beds, each with the latest in electronic monitoring devices. Developments in kidney research and treatment are centered in the renal laboratory and home training dialysis program which treats hundreds of patients yearly. Other special areas such as the Department of Nuclear Medicine and a pulmonary laboratory are all part of Maryland General's continuous growth. The recent completion of a new facility spanning the main hospital and the former Richmond Market Armory has provided needed space for a new gastroenterological research laboratory.

For the fiscal year ending June 30, 1973, there were 14,494 admissions, 7,639 surgical procedures and 902 obstetrical deliveries. The hospital's Outpatient Department accommodates in excess of 75,000 visits per year with expectations to reach over 200,000 by the year 1978. Because of this increased demand for outpatient services, the hospital purchased and renovated the Richmond Market Armory to provide additional space needed for general clinics.

**Mercy Hospital.** Its history can be traced to the foundation of the Washington School of Medicine in 1824. In 1872, some of the members of this institution founded a new school, which was the beginning of the College of Physicians and Surgeons of Baltimore.

Washington School of Medicine opened a dispensary and a small hospital at the corner of Saratoga and Calvert streets and named it the Baltimore City Hospital. This building served both as a hospital and a medical school. In 1874, the Sisters of Mercy, upon the invitation of Washington School of Medicine, assumed responsibility for the nursing services of the hospital. In 1876, Washington University merged with the College of Physicians and Surgeons.

The Sisters of Mercy, in 1888, with the assistance of the faculty of the College of Physicians and Surgeons, began construction on a new hospital adjacent to the earlier buildings. The name of the institution was changed to Mercy Hospital in 1909; and, in 1911 another larger building was constructed occupying the remaining frontage on that block of Calvert Street. The original College of Physicians and Surgeons building was purchased by Mercy Hospital from the University of Maryland in 1921.

Many additions have been made to the physical plant over the years. The present 21-story hospital on St. Paul Place, close to the commercial center of Baltimore, was opened in 1963. A large, modern ambulatory patient department with numerous design innovations to accommodate both private and clinic patients was completed in 1969. Mercy also operates a satellite clinic for out-patient services in South Baltimore.

Mercy's medical advances have included: in 1897, the opening of the only Pasteur Institute for the treatment of rabies south of New York; in 1920, the establishment of the first bronchoscopic clinic in Baltimore; in 1943, opening of the first anticoagulant clinic in Baltimore (serving more than 34,000 patients in 1973); in 1965, completion of a new gastroenterological research laboratory and establishment of a center for gastrointestinal endoscopy; and, in 1974, expansion of its nuclear medicine department.

The hospital is very active in the teaching program of the medical school. Faculty members serve as fulltime heads of medicine, surgery, pediatrics and obstetrics-gynecology. Medical students rotate through the Mercy clinical services during the second, third and fourth years. A School of Medical Technology and a School of Radiologic Technology are conducted in conjunction with the hospital. In addition, the hospital presents a number of seminars and symposiums with credits toward continuing education for physicians and surgeons.

During the year ending June 30, 1974, there were 12,222 general admissions, 88,889 outpatient visits, 1,166 obstetrical deliveries and 26,219 visits to the emergency room. The bed capacity is 364 plus 36 bassinets. All hospital beds are available for teaching purposes.

**Provident Hospital.** Since its establishment on June 13, 1894, Provident Hospital has grown from a ten-bed infirmary to a modern 271-bed hospital complex. The busy, well-equipped emergency rooms and outpatient clinics combined with Provident's outreach programs (Comprehensive Neighborhood Health Center, Project A.D.A.P.T. concerning drug abuse, Provident Quarterway House, Alcoholism Liaison Service Program and Community Mental Health Program) testify to Provident's genuine commitment to meeting the needs of a chiefly black urban community.

Excellence in patient care is at all times the program's main objective. Provident's community orientation and the broad spectrum of cases available enhance the learning experience. Orientation and instruction in this urban setting are achieved through ward rounds, lectures and bedside teaching. In addition, work in the Outpatient Department is supervised by members of the active visiting staff of the respective services.

Provident's active and attending staff consists of over 150 physicians including dentists and consultants. Many of the active staff members have teaching appointments with regional medical schools.

**South Baltimore General Hospital.** Founded in 1904 as an eye, ear, nose and throat clinic, its resources expanded to establish itself as a general hospital 14 years later. In 1968, the hospital moved from 1213 Light Street to its present spacious and modern facilities at 3001 South Hanover Street within the revitalized harbor area. Licensed bed capacity is 408 beds with average occupancy above 85% in 1974. The hospital serves the southern industrial complex of both Baltimore city and county as well as the residents of South Baltimore and northern Anne Arundel County. Facilities include an active coronary care unit, intermediate coronary care unit, medical and surgical intensive care units plus modern equipment in all departments.

In the fiscal year ending September 30, 1974, there were 13,760 admissions, 11,432 surgical procedures and 1,307 obstetrical deliveries. The emergency department provided care for 40,374 patients while the outpatient clinics handled 28,691 visits.

The hospital has approved residencies in surgery, medicine and pathology with pending approval in obstetrics-gynecology and a University-affiliated program in pediatrics. Fulltime directors in all major departments supervise active teaching programs and serve as faculty members at the University. The hospital is approved by the AMA and the Medical and Chirurgical Faculty of Maryland for the continuing education of physicians in Maryland. A School of Practical Nursing and a School of Radiologic Technology are additional educational services of the hospital. Five nursing programs in the state use its facilities for clinical training of students.

**York (Pa.) Hospital.** From its beginning in 1880 with just 12 beds to serve a community of 16,000, York Hospital has grown to meet the needs, on a site established in 1930, to today care for a population of over 275,000 from the greater York area and communities along the northern Maryland line. Annual admissions exceed 20,000, and more than 60,000 visits are made to the emergency room and outpatient departments each year.

A multi-million dollar expansion program, now completed, has doubled the size of the hospital. Its bed complement is 620, of which 50 are monitored. Totally new operating rooms, intensive care units, radiology and laboratory facilities, ambulatory care areas, and inpatient nursing units are now in full operation. York Hospital has functioning departments in anesthesiology, dentistry, family practice, hematology, medicine, nuclear medicine, obstetrics-gynecology, pathology, pediatrics, physical medicine and rehabilitation, psychiatry, pulmonary services, radiology, medical education, and outpatient services.

A modern educational complex housing classrooms, seminar and conference rooms, audio-visual facilities, library, and large auditorium has been built to accommodate the teaching needs of medical education and the five allied schools — medical records science, medical technology, nursing, radiologic technology, and respiratory therapy.

The hospital believes that one of the characteristics of quality graduate medical education is the presence and availability of a teaching physicians committee to education. Over the past 15 years, the hospital has created a group of full-time physician coordinators in all major departments. Other full-time physicians in such areas as cardiology, hematology, nuclear medicine, oncology, pathology, pulmonary disease, radiology, and emergency services complete this group. These physicians, along with the voluntary department chairmen and attending staff, provide the base for graduate medical education offering multiple options including flexible programs, categorical programs, residencies in family practice, medicine, obstetrics-gynecology, pathology and surgery.



## OFFICE OF MEDICAL EDUCATION

The Office of Medical Education was developed in 1969 as a consultative and research arm of the Curriculum Committee. In 1972 it was substantially expanded and reorganized and currently serves as a consultative unit to all departments of the medical school in the following areas:

- Instructional design, implementation and evaluation
- Faculty seminars regarding new developments in instructional design and educational technology
- Educational resources including audiovisual aids, instructional television and computer-assisted instruction
- Development and implementation of computer-based instructional systems
- Development of individualized learning centers, both centralized and decentralized
- Assistance and evaluation in curriculum development
- Coordination of library facilities to include the storage and retrieval of all non-printed educational material and software
- Investigation and utilization techniques for clinical teaching
- Maintenance, distribution and operation of projection and related audiovisual equipment for use in teaching
- Tutorial assistance and study skills
- Classroom scheduling

## ILLUSTRATIVE SERVICES

The Department of Illustrative Services is a functioning component of the Office of Medical Education. The department supplies audiovisual aids to medical school faculty and staff for teaching, research and publication purposes. The primary services include illustration, photography, and offset printing. Student activities that require this type of service are supported by the department.

**Illustration** includes comprehensive renderings of surgical and clinical techniques, anatomical renderings, statistical charts and other graphic representation, simple and comprehensive design and finishing of flyers, brochures, programs and posters. Also included are layout and paste-up for offset printing and photographic copying. In addition, this section is responsible for the design and finishing of motion picture titles, displays and exhibits.

**Photography** includes photographic copying of flat material such as written matter, x-rays, laboratory tracings and data; photography of specimens, equipment setups, surgical, clinical and laboratory activities; public relations, archives and portraiture for school-related purposes. The department is equipped for photomicrography (large and small format), slide duplication and motion picture photography. It further acts as a collection station for commercial processing of color photography by other departments.

**Offset Printing** furnishes volume duplication and offset printing, either electrostatically or through photographic enlarging or reduction involving either line or halftone. The plant is also equipped for graphic arts finishing such as collating, folding, stapling, punching, cutting and padding.



### **ADDITION TO JOHN EAGER HOWARD HALL**

The 14-story Howard Hall addition, scheduled to open in the fall of 1975, will provide an additional 176,347 net square feet of teaching and essential research space. It will house lecture halls and classrooms, teaching laboratories, basic science and clinical department laboratory and faculty areas, and the administrative offices of the Dean of the School of Medicine. The building will be physically linked to the other two major facilities of the school, John Eager Howard Hall and the University of Maryland Hospital, and should become the center of activity for the medical school.

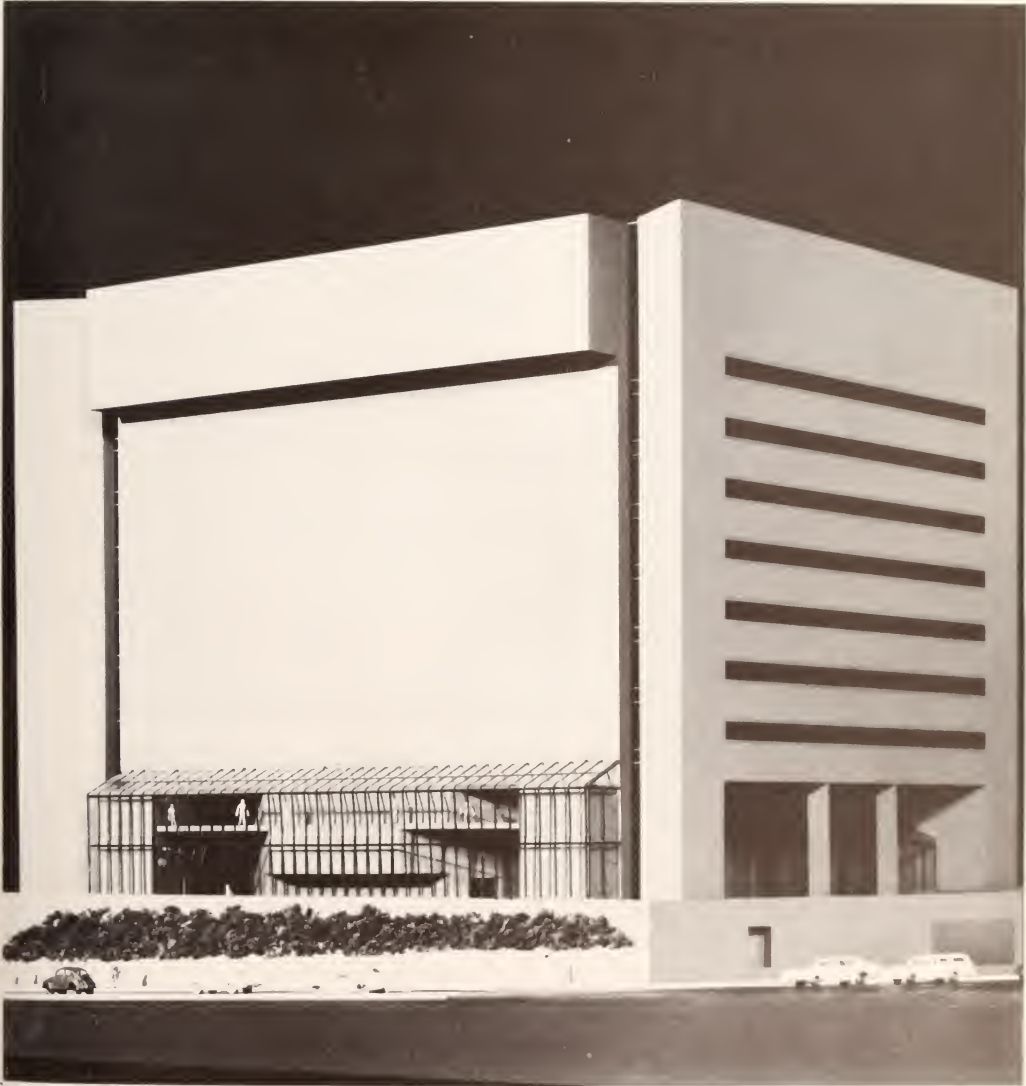
Each of the six floors of Howard Hall are interconnected to the new building by one or more passageways. A bridge at the second level connects the addition with University of Maryland Hospital. The bridge not only allows easy access but should also promote more interaction between clinical and basic science faculty. It will also be used to transport patients to Howard Hall for teaching purposes.

With the additional facility, the medical school entering class for 1975 numbers 170 students. It is anticipated that the School of Medicine will realize its goal of 200 entering students during 1977, following completion of a second medical school teaching facility presently under construction.

## SECOND MEDICAL SCHOOL TEACHING FACILITY

A second teaching facility is currently under construction at the corner of Pine and Baltimore Streets, west of Howard Hall. The new ten-story building, scheduled for completion in Spring, 1977, will contain clinical and basic sciences facilities, some of which are an expansion of existing departments currently housed in Howard Hall, lecture rooms and administrative offices for the School of Medicine.

In keeping with the architectural aesthetics of the campus, the exterior walls will be brick with concrete block back-up trimmed with limestone and granite. The new facility will provide an additional 179,284 net square feet of assignable space.





## HEALTH SCIENCES LIBRARY

The medical, dental, pharmacy, nursing, and social work and community planning schools are served by the Health Sciences Library in a modern, four-story building. The oldest part of the library collection dates back to 1813 when the University of Maryland purchased books of Dr. John Crawford to form a medical library. In addition to the Crawford collection, the library contains more than 175,000 bound volumes and regularly receives over 3,200 scientific periodicals and annual publications. Thus, in providing literature to support the instructional programs and research efforts in five professional schools, the library makes available a wide range of material to the medical community.

Computerized literature searches by MEDLINE, the National Library of Medicine's system, are provided for students, faculty and staff as part of the reference service at the Health Sciences Library.

During the academic year, the library is open 87 hours per week (six nights until 11:00 PM) with a staff trained to give reference service on duty most of these hours.

### LIBRARY STAFF

Moore, Hilda E., librarian and associate professor of library science; AB, Randolph-Macon Woman's College, 1936; ABLS, Emory University, 1937.\*

DeMange, Kathryn K., head, acquisitions; BA, Fresno State College, 1954; MLS, University of Maryland, 1967.\*

Dorfler, Melayn, head, documents; BS, Denison University, 1963; AMLS, University of Michigan, 1965.\*

Ellis, Claudia B., head, circulation; BA, Barnard College, 1972; MLS, Simmons College, 1973.

Hanna, Ruth E., information and public relations officer; AB, Hanover College, 1939; MSLS, Catholic University, 1961.

Jones, Margaret M., head, cataloging; AB, Shaw University, 1947; MSLS, Atlanta University, 1951.

Listfeldt, Hans-Guenther R., head, serials; BS, Loyola College, 1956; MSLS, Catholic University, 1961; PhL, 1967.

Listfeldt, Mary S., head, reference; BA, New York State College for Teachers, Albany, 1944; BLS, University of Wisconsin, 1947; MSLS, Catholic University, 1972.\*

Mitten, Eleanor M., associate librarian and coordinator of readers' services; BS, Cornell University, 1942; BSLS, Syracuse University, 1949.\*

Richards, Katherine M., historical librarian; BA, Marylhurst College, 1964; MLS, Indiana University, 1968; certificate, Johns Hopkins University Medical Library, 1969.

### *Emeritus*

Robinson, Ida Marian, AB, Cornell University, 1924; BSLS, Columbia University, 1944.\*

\*Certified medical librarian



## **ADMISSIONS PROCEDURE**

The University of Maryland, in all its branches and divisions, subscribes to a policy of equal education opportunity for men and women of all races, creeds, and ethnic origins. The School has the objective of securing a broad racial, sexual and ethnic balance in its enrollment. To achieve this objective it desires to give every consideration to minority student applications.

The University of Maryland is accredited by the Middle States Association of Colleges and Secondary Schools. The School of Medicine is accredited by the Association of American Medical Colleges.

## **APPLICATION**

The University of Maryland School of Medicine participates with the American Medical College Application Service (AMCAS) and all requests for a place in the first year class must be initiated by an AMCAS application. AMCAS application request cards can be obtained from AMCAS, Suite 301, 1776 Massachusetts Ave., NW, Washington, D.C. 20036, and the Committee on Admissions, University of Maryland School of Medicine, 660 West Redwood, Baltimore, Md. 21201. In addition, they are usually available from the premedical advisory office at the undergraduate college. AMCAS application material is usually ready for distribution about mid-June of the year prior to the year the applicant wishes to enter medical school.

For the School of Medicine, the AMCAS application is the first of a two-stage application process. The Committee on Admissions thoroughly reviews the AMCAS application and based on the information contained in it determines whether the second stage (School of Medicine) application form can be sent. An application fee to the School of Medicine is due only with the filing of the second stage application form. Every applicant will either be sent second stage application material or be informed that the Committee cannot continue the application process.

It is very definitely in the best interests of the applicant that he file the application form and supporting credentials early in the application period. Please do not have supporting credentials sent prior to filing a final application.

It is the responsibility of the applicant to see that all required credentials and the completed application packet are filed with and received by the Committee on Admissions.

## **APPLICANT SELECTION**

Academic achievement, extracurricular activities, personal characteristics, recommendations from college instructors or the premedical committee, scores on the Medical College Admissions Test (MCAT) and personal interview are all carefully considered in evaluating an applicant. Academic achievement and/or high scores on MCAT do not in themselves ensure acceptance. Of equal concern to the Committee on Admissions are the applicant's personality, character, motivation, sincerity of purpose and an assessment of the applicant as a potential physician. Communication skills, honesty, integrity, acceptance and carrying out of responsibility and involvement in activities in the area(s) of the applicant's interest(s) must also be demonstrated.

Matriculants are required to accept the provisions of the Judicial Board and agree to assume its obligations prior to registration.

Applications from persons with outstanding credentials from other areas of the United States and Canada are welcome and will receive all possible consideration. However, preference in the selection process is given to residents of the state of Maryland. Because of the large number of persons applying, applications can be processed only from citizens of the United States or Canada. A permanent alien immigrant is considered as being a citizen for selection purposes.





## ADMISSION TO FIRST YEAR

Careful attention should be given to choice of undergraduate electives, especially in the sciences. Usually the student should plan a four-year curriculum with a suitable arts and science major leading to a bachelor's degree. A major in an area other than science is quite acceptable although it is not our intention to divert students from a science major if this is their field of choice. The opportunity to place out of biochemistry by written examination is offered.

Applicants who choose a non-science major should take a sequence of science courses which demonstrates their academic ability to handle the demands made by a science-oriented curriculum.

A minimum of 90 semester hours of acceptable college credit is required exclusive of physical education and military science, earned in colleges of arts and sciences whose names appear on the current list of "Accredited Institutions of Higher Education" as compiled by the National Committee of Regional Accrediting Agencies of the United States. Applicants who will have earned a bachelor's degree in arts and sciences from an approved college or university before registration for medical school will be given preference over applicants who have not completed the requirements for the bachelor's degree. The only courses accepted are those which are approved for credit towards a degree by the university or college attended as well as the University of Maryland.

The following college courses and credits at an acceptable level are required before registering for medical school:

	Semester Hours
General biology or zoology	8
Inorganic chemistry	8
Organic chemistry	6
General physics	8
English	6

No more than 60 hours can be accepted from accredited Junior Colleges and then only if these credits are validated by a college offering a Bachelor of Arts or Science degree.

A letter of evaluation is required from the undergraduate premedical committee for those applicants still enrolled in or recently graduated from undergraduate college. If there is no premedical committee, letters are requested from two science and one non-science course instructors. When letters from other sources are sent, they should be only from persons who can candidly and critically evaluate the applicant's accomplishments, productivity and character. Consequently, such letters are usually from individuals who have supervised the applicant in some special experience in the applicant's area of interest or work. In any case, all letters of evaluation should be sent *directly* to the Committee on Admissions; they are *not* to be sent to the American Medical College Application Service (AMCAS).

An evaluation of the applicant's credentials is made by members of the Committee on Admissions to determine if an interview is to be requested. This decision is based upon a composite estimate of the applicant's ability and future promise in the field of medicine as measured by his academic record to date, performance on the Medical College Admissions Test (MCAT), recommendations of the premedical faculty, extracurricular activities, an assessment of the applicant's personal characteristics and the applicant's overall standing as compared to that of the other applicants applying that year. Such interviews must be scheduled in advance at the initiative of the Committee.

The Medical College Admissions Test is usually taken in the Spring and must be taken no later than the Fall of the year preceding the year of entrance. Applicants should write the American College Testing Program, P. O. Box 414, Iowa City, Iowa, 52240, for further information and registration forms, or the Committee on Admissions.

In the selection process, the Committee on Admissions must use as the applicant's residency status that which is in effect on the last day applications can be received (December 31).

For further information regarding the admissions process in general, the applicant is referred to a booklet entitled "Medical School Admissions Requirements" which can be obtained from the Association of American Medical Colleges, Suite 200, One DuPont Circle, NW, Washington, D.C. 20036, at a cost of \$4.



## ADVANCED STANDING

Students who have attended medical schools in the United States are eligible to file application for admission to the second and third year classes only. Application must be made no later than April 15 of the year of desired admission. Applicants for advanced standing must meet the current first year entrance requirements in addition to presenting acceptable medical school credentials and a medical school record based on courses which are equivalent to similar courses in this school.

No student can be considered who has been dismissed from any medical school unless his former dean submits a letter addressed to the Committee on Admissions stating that the student is reinstated in good standing and eligible for promotion. No student can be considered who is not eligible for promotion at the time of transfer.

Persons who already hold the degree of Doctor of Medicine cannot be admitted to the medical school as a candidate for that degree from this University.

The School of Medicine cooperates with the Coordinated Transfer Application System (COTRANS) of the Association of American Medical Colleges. Further information about COTRANS can be obtained by writing COTRANS, Suite 200, Association of American Medical Colleges, One DuPont Circle, NW, Washington, D.C. 20036. All applicants who wish to apply to the School of Medicine for advanced standing on the basis of academic work completed at a medical school outside the United States or Canada, *must do so through the COTRANS procedure*. Such applications can be considered only for advanced standing into the third year. In addition to satisfying all eligibility requirements of COTRANS, the applicant must be a *resident of Maryland* and must successfully complete Part 1, National Board of Medical Examiners. To apply under the COTRANS procedure, the applicant must register with COTRANS and also submit an application form for advanced standing to the School of Medicine by June 1.

## NEW STUDENT ORIENTATION

All new students, whether they are admitted to the first year class or with advanced standing, are expected to attend an orientation for new students.

## GENERAL RULES

The University authorities reserve the right to make changes in the curriculum, the requirements for advancement and graduation, fees, and in rules and regulations whenever appropriate.

Students who report for classes later than one week after the scheduled time will be permitted to begin work only by permission of the Dean. Attendance at all scheduled classes is expected.

Notice of change of address should be submitted promptly to the Dean's Office and to the Registrar's Office.

## DETERMINATION OF IN-STATE STATUS

The Board of Regents of the University of Maryland approved new regulations for the determination of in-state status for admission, tuition and charge-differential purposes at its meeting on September 21, 1973. The new regulations became effective beginning after January 1, 1974.

As amendments may be made to these regulations, persons who are interested in obtaining a copy of the current regulations should write: Committee on Admissions, School of Medicine, University of Maryland, Baltimore, Maryland 21201.





## REQUIRED EQUIPMENT

**Dissecting Instruments.** At the beginning of the first year, all freshmen must possess a complete set of dissecting instruments similar to the ones on display in the bookstore.

**Microscopes.** All freshmen must also provide themselves with a standard microscope. All microscopes must conform to the following specifications:

1. For frequent and prolonged use, a binocular microscope is preferable to a monocular-type instrument and is therefore strongly recommended.
2. 10X oculars; wide field oculars are recommended, but not required.
3. Quadruple nose piece.
4. Four parfocal objective lenses, viz. —
  - 30 mm., 4X, 0.1 N.A.
  - 16 mm., 10X, 0.25 N.A.
  - 4 mm., 43X, 0.65 N.A.
  - 1.8 mm., 97X, oil immersion, 1.25 N.A.
5. Mechanical stage to accommodate standard size microscopic slides; the stage need not be graduated.
6. Built-in, on-base light source; a variable transformer is recommended.
7. Substage condenser; Abbe or variable focus.
8. A carrying case is recommended.

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some of the older instruments are in poor optical or mechanical condition; and, in addition, some are equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard hemocytometer cover glass without breakage.

Based on a determination of financial need, first year medical students may qualify for loan of a microscope. See Financial Assistance section.

All microscopes will be checked during the first scheduled laboratory in histology.

**Other Equipment.** By the second year, medical students are required to have an ophthalmoscope, a blood pressure cuff, hemocytometer, and slit lamp. The estimated cost of these items plus other essentials such as lab coats is \$150 to \$200.



# FINANCIAL INFORMATION

**TUITION AND FEES**

	<b>Fall</b>	<b>Spring</b>	<b>Total</b>
Application Fee*			
Matriculation Fee (new students)	\$ 15.00		\$ 15.00
Fixed Charges — In-State	750.00	750.00	1,500.00
Fixed Charges — Out-of-State	1,500.00	1,500.00	3,000.00
Instructional Resources Fee	15.00	15.00	30.00
Student Activities Fee	11.75	11.75	23.50
Student Health Fee	5.00	5.00	10.00
Hospital Insurance (Individual)**	42.30	42.30	84.60
Supporting Facilities Fee	30.00	30.00	60.00
Dormitory Fee	307.50	307.50	615.00
Graduation Fee — Seniors		15.00	15.00

\*An application fee of \$15 should be submitted with the formal application to the School of Medicine. This fee will be applied against the matriculation fee for accepted students. A deposit on tuition of \$50 is required of all applicants before the expiration date specified in the offer of acceptance. The deposit will be credited against first semester charges. In the event of withdrawal before registration, the advanced deposit will be returned on request, if made before March 1.

\*\*Hospital insurance is required of all fulltime students. A brief outline of the student health insurance program is furnished each student. Students with equivalent insurance coverage must provide proof of such coverage at the time of registration and obtain a hospital insurance waiver. Rates are subject to change.





## FEES

**Application and/or matriculation fee** partially defrays the cost of processing applications for admission and enrollment data in the professional schools. These fees are not refundable.

**Student health fee** is charged to help defray the cost of providing a Student Health Service which includes routine examinations and emergency care. Acceptable medical insurance is required in addition to the student health fee.

**Diploma fee** is charged to help defray costs involved with graduation and commencement.

**Instructional resources fee** is charged to provide supplies, materials, equipment and other costs directly associated with the instructional program.

**Student activities fee** is used to meet the costs of various student activities, student publications and cultural programs. The Student Government Association in cooperation with the Dean's Office recommends expenditure of the fee collected.

**Supporting facilities fee** is used for expansion of various facilities on campus that are not funded or are funded only in part from other sources.

**Fixed charges fee** meets a portion of the costs for the educational program and supporting services.

**Service charge** is assessed for dishonored checks and is payable for each which is returned unpaid by the drawee bank on initial presentation because of insufficient funds, payment stopped, postdating or drawn against uncollected items.

For checks up to \$50 — \$5

For checks from \$50.01 to \$100 — \$10

For checks over \$100 — \$20

**Late registration fee** defrays the cost of special handling involved for those who do not complete their registration on the prescribed days.

No diploma, certificate, or transcript will be issued to a student until all financial obligations to the University have been satisfied.

The University reserves the right to make such changes in fees and other charges as may be necessary.

## REGISTRATION

Each student is required to fill in all registration materials and deposit them with the Office of the Registrar at the beginning of each semester. No registration is complete or official until these materials are deposited and all financial obligations are satisfied. Students who do not complete their registration, including the payment of their bill on the registration days, will be subject to a late registration fee.

One-half of academic yearly fees are payable on the date specified for registration for the first and second semesters. Blue Cross hospitalization for six months in advance is paid at the beginning of each semester. Fourth year students shall pay the graduation fee, in addition, at this time.

Any enrolled student may request at registration the postponement of payment of one-half his fixed charges for 30 days; all other fees are due and payable. For this service a charge of \$2.00 will be made.

If a satisfactory settlement or agreement for settlement is not made with the Business Office within ten days after a payment is due, the student automatically is debarred from attendance at classes and will forfeit the other privileges of the medical school.

## WITHDRAWAL AND REFUNDS

Students desiring to leave the School of Medicine at any time during the academic year are required to file with the Dean a letter of resignation. In addition, an Application For Withdrawal Form bearing the proper signatures must be filed with the Office of the Registrar. The student must satisfy the authorities that he has no outstanding obligations to the school and return his student identification card.

If the above procedures are not completed, the student will not be entitled to honorable dismissal and will forfeit the right to any refunds to which he would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is signed by the Dean.

**Academic standing.** Students who voluntarily withdraw during an academic semester will be given no credit. Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded at the Registrar's Office. Students who withdraw from the medical school and later desire readmission must apply to the Committee on Admissions unless other arrangements have been consummated with the Dean's written consent.

**Refunds.** Students officially withdrawing from the school will be credited for all academic fees charged to them less the Matriculation Fee, in accordance with the following schedule from the date instruction begins:

Two weeks or less — 80 per cent

Between two and three weeks — 60 per cent

Between three and four weeks — 40 per cent

Between four and five weeks — 20 per cent

After five weeks — 0 per cent

**Leaves of Absence.** Students who are in good standing may be granted one year's leave of absence on request to the Dean. Longer leaves can be arranged only under special circumstances except those students in the combined MD-PhD program.

## FINANCIAL ASSISTANCE

The University of Maryland School of Medicine's financial aid program is available for medical students who demonstrate financial need. Through a varying combination of grants, scholarships, long and short term loans, and part-time employment, and, in some cases, instruments and equipment, students may receive assistance in meeting educational expenses. In addition to the school resources, outside funding agencies make financial assistance available to qualified medical students.

An application for financial aid must be submitted annually, no later than April 15, to be considered for assistance for the following academic year. Information from this one application will be used to determine eligibility for all types of assistance available through the School. Applications of entering students will be considered only after the applicant has been accepted for admission. Entering students will be forwarded financial aid applications upon request to either their admission committee or to the Student Aid Office. Students currently enrolled in the School of Medicine may obtain forms from the Student Aid Office.

The amount of student assistance is determined on the basis of demonstrated financial need. Eligibility for financial aid is dependent upon the student maintaining good academic standing and full-time attendance. Aid is normally awarded to part-time students only in the amount required to cover tuition and fees. When determining the amount to be awarded, the Financial Aid Committee considers the following: 1) the income, assets, and resources of the student and his family; 2) support available to the student from non-University sources; 3) the costs reasonably necessary for full-time attendance at the school.

Renewal of financial aid for succeeding years is dependent upon annual submission and review of a financial aid application, the student remaining in good academic standing, the student's continued financial need, and the availability of funds.

### MEDICAL SCHOOL FUNDS

**State Grants.** These funds are allocated to the School of Medicine each year for the purpose of making grants to minority and disadvantaged students who demonstrate a great financial need. These awards may be renewed annually but are restricted to legal residents of the State of Maryland.

**Dean's Scholarship.** On an annual basis, funds are provided to support the Dean's Scholarship Program. Scholarships are awarded to minority and disadvantaged students who demonstrate financial need but who do not meet the eligibility requirements for State Grants.

**The Merck Company Foundation Student Aid Program.** On an annual basis, the Merck Company Foundation makes awards to medical schools in the United States to financially assist students from recognized underprivileged and low income populations. Awards are made on the basis of minority representation in each first year class. To be eligible for assistance under this program, the medical student must be a United States citizen from an impoverished background and demonstrate financial need.

**Robert Wood Johnson Foundation.** A grant was awarded to the University to provide assistance to minorities, women, and students from rural areas in their educational pursuits. From these funds, the School of Medicine has established a scholarship and loan program to assist eligible students in these categories who have demonstrated a great financial need. This grant was received in 1972 to be extended over a four-year period; continuing loan funds will be available based on yearly collections.

**Endowment Funds.** From bequests and private donations, the School of Medicine has established an endowment fund which produces income on an annual basis. This income is used to provide fellowships, scholarships and loans for students on the basis of their academic achievement and their financial need. The amounts of these fellowships, scholarships and loans vary and are awarded on an annual basis.

The availability of funds from each of the endowed accounts is dependent upon the income generated.

*Avalon Foundation Scholarship.* Awarded in conformity with school policy.

*Balder Scholarship Fund.* Gift or loan to needy student in line with school policy.

*Israel and Cecelia E. Cohen Scholarship.* Student must plan to practice in Maryland.

*William H. Crim Scholarship.* Given to deserving students.

*A. Lee Ellis Scholarship.* Scholarships for residents of: 1) Sussex County, Delaware, 2) Delaware, and 3) Baltimore City.

*Edward G. Field Memorial Fund.* Scholarship to needy student, intern or resident.

*Sharon Fox Scholarship Fund.* Awarded to worthy male student(s).

*Leon Frank Scholarship.* Given to needy student who has completed first year in good standing.

*Harry Gudelsky Fund.* Fellowships to students engaged in research for cancer or heart diseases.

*Horace Bruce Hetrick Scholarship.* Given to a needy senior student.

*Charles H. Hitchcock Scholarship.* Three scholarships available.

*Charles M. Hitchcock Scholarship.* Given to needy student who has completed first year.

*W. Alton Jones Scholarship.*

*Leo Karlinsky Scholarship.* Available to needy student who has completed first year with an 85 per cent grade average.



- Emmett and Ruth Light Scholarship.* Scholarship(s) for deserving student(s).
- Alex J. and Clara Maysels Scholarship.* Scholarships and loans provided for deserving students.
- Arthur C. Palmateer Memorial Scholarship.* Restricted to student desiring to specialize in eye, ear, nose, and throat problems.
- Charles Pfizer Scholarship and Loan Fund.* Available to needy student(s).
- Henry Rolando Scholarship Fund.* Scholarship for Maryland resident in need of financial assistance.
- Morton and Elaine Schwartz Scholarship.* Awarded to needy student(s).
- David Street Memorial Scholarship.* Awarded in conformity with school policy.
- Arnold Tramer Scholarship Fund.* Given in line with school policy.
- Michael Vinciguerra Scholarship.* Given in line with school policy from income.
- Clarence Geneva Warfield Scholarship.* Available to a first year student who is a resident of Maryland.
- John F. B. Weaver Scholarship.* In conformity with school policy.
- John L. Whitehurst Fund.* One-half of funds for medical school research scholarship(s).
- Randolph Winslow Scholarship.* Available to needy student who has completed first year.
- Henry Zoller, Jr. Scholarship.* One-half of income for scholarship(s) to deserving student(s).
- Balder Loan Fund.* Interest-free through internship training; then four per cent per annum to be repaid in five years.
- Jay W. Eaton Loan Fund.* Loan towards tuition for senior student; repayable without interest within four years after graduation.
- Foundation Loan Fund — Class of 1934.* Two per cent interest paid semi-annually; one-fifth due two years after graduation and one-fifth due each year thereafter.
- Gold-Steinberg Memorial Loan Fund.* Loans to third and fourth year students in lower third of class; four per cent interest rate.
- Isaac Gutman Loan Fund.* Interest-free loans through training; repayable in five years at rate of four per cent, if gainfully employed.
- W. K. Kellogg Loan Fund.* Two per cent loans paid twice yearly; one-fifth due two years after graduation; one-fifth due each year thereafter.
- William and Sarah Kraut Loan Fund.* Three per cent interest loans; repayment to begin five years after graduation in five installments.
- Michael H. Lipman Loan Fund.* Non-interest bearing loans to disadvantaged students to be repaid after graduation.
- Joseph Lipskey Loan Fund.* Interest-free loans to be repaid within three years after graduation.
- Marie K. Manger Loan Fund.* Interest-free until training is complete; then four per cent per annum to be repaid within two years.
- Frank C. Marino Loan Fund.* Two per cent interest, paid semi-annually beginning six months from date of loan; one-fifth of total to begin two years after graduation.
- Medical School Council Loan Fund.* Due five years after graduation; five installments at rate of three per cent.
- Edward and Lina Meirhof Loan Fund.* Two per cent loans, paid twice yearly; one-fifth due two years after graduation; one-fifth due each year thereafter.
- Memorial Loan Fund — School of Medicine, Class of 1916.* Limited loans at two per cent interest until one year after graduation including house officer training; after which time the interest rate is four per cent per annum to be repaid in five years.
- Jessie Smith Hoyes Loan Fund.* Three per cent interest on unpaid balance; repayment begins five years after graduation; five installments.

*Senior Class Loan Fund.* Three per cent interest loans, paid twice yearly; one-fifth due two years after graduation; one-fifth due each year thereafter.

*Senior Class of 1945 Loan Fund.* Loan to senior student at two per cent interest rate; repayable within five years after graduation.

*Christopher C. Shaw — Class of 1931 Loan Fund.* Three per cent interest on unpaid balance; repayment begins five years after graduation in five installments.

*Hugh R. Spencer Loan Fund.* Two per cent interest semi-annually; one-fifth of loan due two years after graduation; one-fifth due each year thereafter.

*Webster M. Strayer Loan Fund.* Non-interest bearing loans during educational period; repayment begins two years after internship and residency at interest rate of four per cent; annual installments.

*University of Maryland Class of 1938 Loan Fund.* Non-interest loans payable five years after graduation; interest rate after five years determined by school.

*Women's Auxiliary of Montgomery County Loan Fund.* Interest-free for junior and senior students until two years after training; then four per cent per annum to be repaid within three years.

**Microscope Loan Program.** Based on a determination of financial need, first year medical students may qualify for the loan of a microscope. The Office of Medical Education distributes loan microscopes to approved first year students for use during their first and second academic years. Students are charged a minimal maintenance fee annually.

A portion of the proceeds from the annual Women's Auxiliary to Student American Medical Association microscope sale is given to the Financial Aid Office to purchase microscopes for this program.

**Federal Funds — Health Professions Student Scholarships.** The federal government extends assistance to students demonstrating exceptional financial need in the form of Health Professions Scholarships. The scholarship can be renewed only after annual reassessment of the student's financial position.

**Federal Funds — Health Professions Student Loans.** Under the Federal Health Professions Program, loans are made available to qualified students. Loans are reviewed on an annual basis and vary in amounts up to \$3,500 per year depending on the student's financial need. Loans do not accrue interest until after graduation nor during periods of deferrment. Repayment begins one year after graduation and must be completed within ten years from that time. Current interest is charged at the rate of 3 per cent per annum. Borrowers may enter into an agreement with the Secretary of HEW to practice medicine for at least a two-year period in a designated shortage area and thus receive cancellation benefits. Cancellation benefits accrue at a rate of 30 per cent of principal plus interest for each of the first and second years and an additional 25 per cent for a third year of such practice up to a maximum of 85 per cent.

**Federal Funds — College Work-Study Program.** The University receives Federal funds on an annual basis for the College Work-Study Program. Under this program, students are employed on a part-time basis up to 20 hours per week during the academic year and on a full-time basis during the summer months. Students are placed in both on-campus and off-campus positions based on their interest, academic curriculum, and qualifications. Each year the number of students employed under the program is dependent upon the level of Federal support. Interested students should contact the Student Aid Office for further details pertaining to this program.

## OUTSIDE SOURCES

In addition to seeking financial assistance through the School of Medicine, students may apply for aid to sources independent of the University. Each of the agencies or

programs listed below should be contacted directly for more information; application deadlines vary but most are in early Spring.

**Armed Services Scholarships.** The Armed Services Scholarship Program, created by an Act of Congress (PL 92-426), enables a medical student to be commissioned as an officer in the United States Army, Air Force, or Navy. While attending school, the student remains in an inactive status and draws a stipend of \$400 per month, plus tuition and other academic expenses. Each year, all participants will be called to active duty for 45 days as a second lieutenant, drawing full pay and allowances for the grade and assigned to either clinical or professionally-oriented training. For further information, contact your local military recruitment office or the Student Aid Office.

**Public Health Service Health Professions Scholarships.** Under this new scholarship program initiated during the 1973-74 academic year, eligible students receive a stipend of \$600 per month (not to exceed nine payouts per year), plus tuition and fees from the Public Health Service. To be eligible for acceptance, an applicant must be enrolled full time; a citizen of the United States; physically qualified; and maintain an acceptable level of academic standing. For further information, contact the U.S. Public Health Service, Parklawn Building, Rm. 4-35, 5600 Fishers Lane, Rockville, Maryland 20852.

**Maryland State Scholarship Board — Professional Scholarship.** All students pursuing a MD degree within the School of Medicine and who have been residents of the State of Maryland for at least three years are eligible to apply for the Maryland State Professional Scholarship. Normally, applications are available in the Student Aid Office during March and April for the following academic year. All applications are mailed directly to the Maryland State Scholarship Board for their consideration. For further information, contact the Maryland State Scholarship Board at 2100 Guilford Avenue, Baltimore, Maryland 21218.

**Maryland State Scholarship Board — Family Practice Scholarship.** The State of Maryland has authorized a number of scholarships to the University of Maryland School of Medicine for courses of study leading to the degree of Doctor of Medicine. Ten scholarships in the amount of \$1,500 each are awarded on an annual basis. Applicants must agree to practice general medicine for three years in an area of need in the State. For further details, contact the Maryland State Scholarship Board at 2100 Guilford Avenue, Baltimore, Maryland 21218.

**National Medical Fellowship Program.** Entering students who are members of minority groups currently under-represented in the medical profession are eligible to apply. Awards vary in amount depending on the student's financial need and are normally awarded for the first two years of medical school. For additional information and application, write to Mrs. Hilde Reitzes, National Medical Fellowships, 3935 Elm Street, Downers Grove, Illinois 60515.

**Guaranteed Student Loan Program.** Many states sponsor a Higher Education Loan Program for students who are permanent residents. Students are eligible to borrow money under the program from their local banks or lending institutions in varying amounts up to \$2,500 per year. For applications and further information concerning deadline dates, students should contact the loan agency in their state of permanent residence.

Loans are repaid over a ten-year period after graduation and accrue interest at the rate of 7 per cent per annum. Depending on the student's financial situation, the Federal government may pay the interest while the student is in school. For students who are residents of the State of Maryland, applications and information are available in the Student Aid Office or from the Maryland Higher Education Loan Corporation at 2100 Guilford Avenue, Baltimore, Maryland 21218.





## STUDENT LIFE

## OFFICE OF STUDENT AFFAIRS

The Office of Student Affairs is designed to provide students enrolled in medicine, physical therapy, medical technology and radiologic technology with guidance, advice, help and administrative services. In addition, the office is responsible for monitoring student progress and advancement, the distribution of financial aid, registration, graduation and all aspects of student life relating to the undergraduate medical and allied health education. To this end, the office includes two fulltime assistant and associate deans, three parttime assistant deans, a clerical staff and a student ombudsman.

While the entire staff is available to help all students in any area, some members also assume a specialty area within their overall functions. These specialty areas include minority affairs, senior elective year advising, student fellowships and national internship and residency program advising.

**Student Ombudsman.** Each year a student, usually one having completed all or part of his third year, is appointed to the Office of Student Affairs' staff. The job is fulltime and is salaried. The functions of the ombudsman vary to suit the interests and personality of the incumbent, but include, in any event, liaison with all student committees and organizations, ex-officio membership on numerous faculty committees and serving as a contact for both students and faculty for information, advice and help. Students interested in this position should contact the Office of Student Affairs.

**Elective Program.** The Office of Student Affairs compiles course offerings, arranges for advisors, schedules the ambulatory rotations, schedules courses and changes of electives and provides both for evaluation of the student's performance during electives and his evaluation of the electives taken. This office also provides assistance to individuals taking off-campus electives which require letters of recommendation.

**Financial Assistance.** Information regarding the types of aid available to medical students is detailed in the Financial Information section.

## STUDENT GOVERNMENT

**Committee on Student Activities.** A standing committee of the School of Medicine Council is charged with the continued study of the health and general welfare of the students. This includes health and safety, ethics and financial aid. The Director of the Office of Student Affairs chairs this committee which is composed of presidents and chairmen of student groups, editors of student publications and faculty members, appointed by the associate dean, with particular concern in the area of student affairs.

**Judicial Board.** The medical school community operates under a general statement of ethical principles which are under periodic review by a Judicial Board. This Board is chaired by a faculty member appointed by the Dean and is composed of elected representatives from the faculty, the student body, and the housestaff. The Board investigates any alleged infractions of the ethical code and conducts appropriate hearings. It reports its findings and recommendations to the Dean, who presents an impersonal report of the decisions to the School of Medicine Council.

**Student Council.** This organization is recognized by the administration of the School of Medicine as the official representative body of medical, medical technology, physical therapy and radiologic technology students. All students of these professions become *de jure* members of the student body at registration upon payment of the student activities fee. The Student Council members are elected by the classes of the student body with one representative per 50 members (or fraction thereof), the first representative being the duly-elected president of the class.



Duties of the Student Council are as follows: (1) to disburse monies from the student activities fund according to the council's financial disbursement guidelines; (2) to organize and administer the intramural athletic program, and (3) to define areas of schoolwide interest and to coordinate support for related activities through policy guidance, funding and promotion.

Each year the Student Council sponsors an intramural program for medical, medical technology, physical therapy and radiologic technology students. The events usually consist of interclass competition in touch football, basketball, softball and tennis. A ping-pong tournament and coed volleyball are also regular events.

## STUDENT PUBLICATIONS

**Terrae Mariae Medicus.** The yearbook is published annually at the discretion of the medical school's senior class. Since 1896, the volume has provided a wide coverage of student life. The cost of the yearbook is included in the student activities fee.

**Aesclepian.** The student newspaper is sponsored by a student group such as SAMA or the Student Council. A student editor is paid by the sponsoring group to produce up to eighteen issues a year.

## STUDENT ORGANIZATIONS

**Student American Medical Association (SAMA).** The SAMA chapter at the University of Maryland School of Medicine is chartered as a member body of the national SAMA, an organization begun in 1951 to channel student activism into improving the delivery of health care in the United States. As such, its concerns encompass the entire spectrum of health issues, from manpower recruitment, education and utilization, to legislation and planning of innovative methods of raising the level of health care in the country. Membership is open to all medical, allied health professions and pre-med students on an affiliate basis. Nationally, SAMA offers students the opportunity to design, administer and participate in programs and projects which increase the student's awareness of the multiplicity of factors that determine "level of health." Locally, SAMA sponsors freshman orientation for the medical school, fosters social interaction among medical students and sends delegates to regional conferences and national conventions. Each year SAMA also selects the teaching faculty to receive the Golden Apple award in recognition of their teaching excellence.

**Women's Auxiliary to Student American Medical Association (WASAMA).** The aims of WASAMA are to familiarize its members with the profession of medicine, its goals and ideals. It has promoted closer association among these members, both with each other, and with wives of faculty members and with physicians of the medical community. The scope of the auxiliary's involvement includes a wide range of activities. Primary areas of concern are community service projects, medical school services and the education of members concerning current trends in medicine, such as medical legislation, distribution of physicians, local health care programs. Specifically, these activities include publication of areawide housing information, a welcoming picnic, sponsorship of workshops on interpersonal communication, an annual microscope sale and social functions throughout the year. Membership is open to all spouses of medical students.

**Student National Medical Association (SNMA).** The University of Maryland SNMA chapter was organized in 1970 by the minority students in the medical school. The organization's general goals are aimed at alleviating the crisis of health care delivery in minority groups of the American population by increasing the enrollment and decreasing the attrition rate of minority students in medical schools. A very specific goal



of the national organization is a program directed at the problem of sickle cell anemia. On campus, the local chapter gives a voice to problems facing minority students in medicine in general, and at this medical school in particular. The group also provides pertinent activities and functions for the well-being of its members.

**University of Maryland Medical Society.** Established in 1972 as the "chapter body" of the Medical and Chirurgical Faculty, Maryland's state medical society, it is the means by which students may express their views on current medical issues to the parent organization. Each medical school in the state is entitled to two nonvoting representatives, juniors or seniors, to serve in the Med Chi's House of Delegates. At Maryland, this society elects these representatives and their alternates. Membership is open to all medical students.

**Family Practice Club.** In 1969, a group of medical students formed this organization to increase the awareness of the new specialty of family practice and to provide activities related to it. This is accomplished through the club's summer preceptorship program and its monthly meetings at which students interact socially with practicing family physicians in their discussion of topics of current interest in family medicine. The Maryland Academy of Family Physicians and the medical school's Division of Family Practice are both very active in their support of the club's activities.

**Alpha Omega Alpha.** The Beta chapter of Maryland was established at the University of Maryland in 1949. Medical students possessing outstanding qualities of moral integrity, scholarship and leadership are elected to membership in their third or fourth years. The society sponsors an annual lectureship, a forum for the presentation of medical student research and chapter meetings on topics of social, educational and philosophical interest to medical students and faculty.



## STUDENT HEALTH SERVICE

The School of Medicine provides medical care for its students through the Student Health Service located in Room 145, Howard Hall. The office is staffed by a physician-director, assistant director, three internists, two psychiatrists, a gynecologist, three registered nurses and two secretaries. The care provided is an office type of practice for those with illnesses or injuries not requiring hospitalization but preventing the student from attending classes.

All students are required to have Blue Cross hospitalization insurance or its equivalent and must produce proof of such membership at the time of registration. A special Blue Cross-Blue Shield student policy is available to all students enrolling in the medical school. Detailed information regarding its provisions may be obtained from the Student Health Service.

The Health Service provides each new student with physical examination, tuberculin test and chest x-ray as scheduled by the medical school. Abnormalities found during examination are discussed with the student. All students must pass the physical examination before final acceptance can be granted.

Prospective students are advised to have any known physical defects corrected before entering the School of Medicine in order to avoid absences during the academic year. Adherence to preventive medicine programs conducted by the Health Service (i.e., tuberculin skin test and chest x-rays) is required of all students.

The Health Service does not treat chronic conditions contracted by students prior to admission or extend treatment to acute conditions developing in the period between academic years.

A student's spouse or other members of the family are not eligible for Health Service care. In this regard, however, the Family Practice Health Center is available to family members for health care.

Students who register for nine or more credit hours are required to pay a health fee at the time of registration. This fee covers all visits to the Health Service during the school year. Any necessary diagnostic studies will be at the expense of the student unless the studies are covered under the Blue Cross-Blue Shield or equivalent insurance.

For further information contact the Student Health Service.

## HOUSING

The Baltimore City campus has two residence halls: Parsons Hall with a capacity of 236 spaces for females and the Baltimore Union which has 64 spaces for females and 128 spaces for males. Since facilities on campus are limited, assignments are based on distance from home to campus, date of housing application and availability of space.

The Baltimore Union, a five-story semi-airconditioned building, is located adjacent to the University of Maryland professional schools at 621 West Lombard Street. Students are housed on the third, fourth and fifth floors while the lower floors contain a cafeteria, fountain lounge, meeting rooms, laundry facilities, gameroom and bookstore. Double rooms only are available and they are furnished with a bed, mattress, chest of drawers, closet, bookshelves, desk, desk chair and desk lamp. Telephone service is available through Chesapeake and Potomac Telephone Company for an additional charge.

Parsons Hall, a seven-story semi-airconditioned building located at 622 West Lombard Street, is a residence for women. This dormitory provides accommodations for nursing, pharmacy, x-ray, medical technology, dental hygiene, graduate and professional students. Single, double and triple rooms are available. Telephone service is limited to campus phones in each room and furnishings are similar to those in the Baltimore Union.

The charge for each student is \$307.50 per semester and subject to change. Towels and linens may be rented from the Gordon-Davis Linen Service or each resident may provide his own. A small amount of storage space for luggage is available.

Application forms for housing may be secured by writing the Director of Housing, 621 West Lombard St., Baltimore, Md. 21201. Rooms will be assigned only on receipt of an application form duly executed.

## PRIZES

**The Dr. Wayne W. Babcock Prize.** Each year a prize of \$50 is awarded to a graduating senior for outstanding work in surgery as a memorial to Dr. Wayne W. Babcock.

**The Balder Scholarship Award.** Each year a prize of \$500 is awarded for outstanding academic achievement to a graduating senior.

**The Dr. J. Edmund Bradley Prize.** Each year a graduating senior who has performed with special excellence in pediatrics is awarded a \$100 prize in honor of Dr. Bradley, professor emeritus of pediatrics.

**The Louis, Ida and Samuel Cohen Award.** A scholarship of approximately \$500 is awarded annually to a member of the senior class and housestaff for recognition of their superior scholarship, scientific knowledge in internal medicine, and human understanding and compassion for patients.

**Faculty Gold Medal.** Each year a medal is struck and presented to the graduating senior who in the estimate of the faculty has achieved the highest level of academic excellence throughout his undergraduate tenure.

**Summa, Magna and Cum Laude Awards.** Certificates of honor are presented to those candidates for graduation who, during their four academic years, have exhibited outstanding qualifications for the practice of medicine.

**The Dr. Jacob E. Finesinger Prize.** A prize of \$100 is given each year in honor of Dr. Jacob E. Finesinger, late professor and chairman of the Department of Psychiatry, to the member of the senior class selected by the faculty who has done outstanding work in psychiatry.

**The Dr. A. Bradley Gaither Memorial Prize.** A prize of \$25, given each year by Mrs. Gaither as a memorial to her husband, is awarded to the student in the senior class excelling in genitourinary surgery.

**The Dr. William Alexander Hammond Award.** A prize of \$100 is awarded to a graduating senior who has performed with special excellence in neurology.

**The Dr. Leonard M. Hummel Memorial Award.** A gold medal and Certificate of Proficiency is awarded annually as a memorial to the late Dr. Hummel to the graduate selected by the Executive Committee of the faculty who has manifested outstanding qualifications in internal medicine.

**The Dr. Milton S. Sacks Memorial Award.** A prize of \$100 is given annually in honor of Dr. Sacks, late professor of medicine and hematology, to the senior selected by the faculty who has performed with special excellence in medicine and hematology.





## PROGRAMS OF STUDY

## CURRICULUM

Broadly stated, the educational objectives of the School of Medicine are as follows:  
— To educate students in a manner which will enable them to function at a high level of professional expertise and social awareness on a broad base of medical competence.

— To introduce the medical student to the concept of primary care of patients and to provide the medical student with sufficient opportunities to develop knowledge and skills for the delivery of primary care to the patient population.

— To provide opportunities for students at every level of training to pursue areas of special interest in depth, whether for intellectual stimulation or furtherance of a career choice.

— To encourage students to seek future medical careers in areas of need whether these be professional or geographic.

— To train a variety of individuals to form the core of highly competent professionals who will practice medicine as generalists or specialists, teach full or part-time, or continue to add to knowledge through research.

More specifically, the curriculum has been designed to meet medical educational contingencies as they arise. To this end, the faculty has established as a basic principle, continuous curricular review and has empaneled a standing Committee on Curriculum Coordination which is composed of Year 1, Year 2, and Clinical Year faculty chairmen, special course chairmen, faculty members-at-large, and representatives of the student body. This committee is charged with the responsibility of monitoring the curriculum and recommending changes whenever they are deemed necessary. The curriculum varies from year to year to meet changing needs of graduate medical education and health care delivery.

Potential students are advised that although the current curriculum is based on a five-day per week class structure, there is a strong possibility that future curriculum developments may necessitate a five and one-half day (Saturday mornings) structure of compulsory attendance during the pre-clinical Years I and II. Additionally, it should be noted that the current Clinical Years curriculum frequently involves weekend attendance.



**First and Second Years.** Recent curricular change has resulted in two four-month core sessions in each of the first and second years. During the months of January and June, elective courses will be taught with a minimum requirement of eight elective freshman/sophomore courses to be achieved by medical students prior to advancement into the third year. These elective courses may be taken during any one of the four minimesters at the student's and advisor's discretion.

During the freshman year, the following core courses are taught: Anatomy (including Gross Anatomy and Histology), Biochemistry, Social and Preventive Medicine, Psychiatry, Physiology and Biophysics (combined), Genetics (interdisciplinary course), and Neurosciences. In addition, a new course entitled "Introduction to Clinical Practice" has been introduced into the freshman year including such subjects as Interviewing Techniques, Emergency Medical Care, Normal Physical Diagnosis, Specialty Physical Diagnosis, and Intimate Human Behavior.

During the sophomore year, students encounter the following core courses: Microbiology, Pathology, Pharmacology, Physical Diagnosis, Psychiatry, and Social and Preventive Medicine. Introduction to Clinical Practice is continued in the sophomore year including courses in Legal Medicine and Medical Ethics. Furthermore, there is an emphasis throughout the year on clinical correlation with combined instruction by basic science and clinical science faculty. This correlative teaching involves faculty of all the basic science departments in cooperation with the clinical scientists in order to provide the sophomore medical student with the full spectrum of the basic science foundation and the clinical science presentation of disease states.

**Third and Fourth Years.** Within the next year, a new clinical years curriculum will be instituted. This curriculum will require the student to spend a minimum of one summer between the sophomore and junior or junior and senior year taking clinical science courses at the University of Maryland School of Medicine. As currently planned, the two clinical years are viewed as a total unit with progressive patient responsibility on the part of the student. The first clinical experience consists of four 12-week rotations which are as follows: Internal Medicine; Surgery; Obstetrics/Gynecology and Psychiatry; Pediatrics, Radiology, and Neurology. The student will take these four 12-week quarters according to a specific individual schedule. Course order for individual students will be based on logistical sequencing. The sum of these quarters provides a 48-week background introduction to clinical science.

Following this experience, the student will have a 24-week block including an eight-week elective period in which the student may pick one or two electives of his/her own choice. An additional eight weeks will be spent in a student internship in one of four clinical fields: Medicine, Surgery, Pediatrics, or Family Practice. Here the student will be given an opportunity for primary patient care responsibility over a prolonged period of time. This rotation will generally be given at the University of Maryland Hospital, or, on occasion, at an approved affiliate. The third two-month segment will be a consecutive eight-week experience in an ambulatory setting. These outpatient settings will include Internal Medicine, Pediatrics, Family Practice, and Social and Preventive Medicine. The student may select the clinical field in which he would like to spend his ambulatory time. During this period, two afternoons per week will be dedicated to the study of Social and Preventive Medicine. In the additional free time, the student may audit available electives. The combined clinical years program equals the usual 72-week combination of the final two years but supplements the strong background of clinical science with a definitive opportunity for primary responsibility during the subsequent clinical experiences. It is hoped that this curricular change will better prepare the medical student for the increasing responsibility demanded by the new specialty residency programs which have been adopted throughout the country.





## GRADES AND PROMOTION

Official grades are designated by the following symbols:

- H—Honors, completion of the course with exceptional performance
- P—Satisfactory completion of a course
- C—A nonpassing grade which must be remediated before advancement
- F—Failure

When circumstances beyond a student's control make it impossible for him to complete a course at a usual time, he will be given an incomplete (I) until such time as he has completed the course. An "I" is in no way prejudicial to the final rating or grade of the student in the course.

Periodically throughout the academic year, the Advancement Committee convenes to review the records of all students in each class. The estimate of a student's academic status is based on academic achievement, his moral and ethical traits and general evaluation of his fitness for a career in medicine.

Students with one or more "F" or "C" grades, at the discretion of the Advancement Committee, may be allowed to remove them by: reexamination, repetition of the course, the semester, the entire year at the School of Medicine or the course at any school satisfactory to the department head, or may be dismissed.

Students who repeat a year and who do not show significant improvement in all courses may, at the discretion of the Advancement Committee, be dismissed. All "F" grades must be absolved prior to graduation.

The faculty reserves the right to determine if a student may withdraw, repeat, advance or graduate on academic or moral and personal grounds, including traits of character.

All discretionary actions of the Advancement Committee are subject to ratification by the School of Medicine Council and must be presented to this body at its next meeting.

## INTERNSHIPS, RESIDENCIES AND FELLOWSHIPS

Graduate specialty programs for interns, residents and fellows at the University of Maryland Hospital are approved by the Council on Medical Education and Hospitals of the American Medical Association and, in Dentistry, by the American Dental Association.

The 41 approved intern positions are filled through the National Internship and Residency Matching Program. Included are both rotating and straight internships in family practice, medicine, obstetrics-gynecology, pathology, pediatrics and surgery.

Approximately 320 resident and fellowship positions are available in the following specialty areas:

Department of Anesthesiology: anesthesiology

Department of Dentistry: oral surgery

Division of Family Practice: family practice

Department of Medicine: cardiology, dermatology, endocrinology, gastroenterology, infectious diseases, internal medicine, nuclear medicine and nephrology

Department of Neurology: neurology

Department of Obstetrics and Gynecology: obstetrics-gynecology

Department of Ophthalmology: ophthalmology

Department of Pathology: clinical and anatomical pathology

Department of Pediatrics: pediatrics and pediatric allergy

Department of Psychiatry: psychiatry and child psychiatry

Department of Radiology: radiology and radiation therapy

Department of Rehabilitation Medicine: rehabilitation medicine

Department of Social and Preventive Medicine: preventive medicine

Department of Surgery: general surgery, neurosurgery, orthopedic, otolaryngology, thoracic and cardiovascular, and urology

Appointments to internships and residencies are made by the director of the hospital upon recommendations of the housestaff committee of the Medical Board or, in the case of residents, upon the recommendation of the appropriate clinical department chairman. Correspondence and applications should be addressed to: Internships, The Director, University of Maryland Hospital, 22 South Greene Street, Baltimore, Md. 21201.

Residencies should be addressed to the chairman of the respective department or division at the same address.

## ADDITIONAL EDUCATIONAL PROGRAMS

**Baccalaureate Degree.** Selected students entering the School of Medicine from colleges which usually grant a baccalaureate degree after the successful completion of the first year of medicine, are responsible for: (1) providing a certificate from his college or university that he is eligible for this degree, and (2) meeting all requirements of the School of Medicine for advancement to the second year.

**Graduate Program.** Graduate courses and research opportunities leading to advanced degrees are available in most of the basic science departments of the School of Medicine. Students pursuing graduate work must register in the Graduate School of the University of Maryland and meet the same requirements as other graduate students. A catalog of courses and information concerning the graduate programs offered at the University of Maryland at Baltimore can be obtained from the Office of the Dean for Graduate Studies and Research, University of Maryland at Baltimore, Baltimore, Md. 21201.

**Combined PhD-MD Program.** Properly qualified medical students may elect to enter a combined educational program leading to the MD and a graduate degree. As these programs are currently undergoing reevaluation by the School of Medicine and the Graduate School, interested students are advised to contact the individual departments or the Dean for Graduate Studies.

**Program of Continuing Education.** The University of Maryland School of Medicine is concerned about three phases of a physician's education: undergraduate, graduate and postgraduate or continuing education. Recognizing its responsibility to the people of Maryland, the medical school strives to make continuing education as meaningful and accessible to the state's physicians as possible. Such a commitment is fulfilled through the Program of Continuing Education which is administered by a program director, an associate director and a fulltime staff as well as a Committee on Continuing Education. The special events offered through this program are fully approved by the American Medical Association and thus qualify for its physician recognition award. This program can also be used by a physician to meet the Maryland requirements for relicensure.

All professions, but especially physicians, are called upon by society to continue to learn. The physician must bring to his particular practice new medical knowledge as it becomes available. This is accomplished in various ways including: reading in medical journals and textbooks; through consultations and conferences with his peers about clinical problems; and, attending organized conferences within his areas of interest, usually held at a convenient teaching hospital. The reward the doctor receives for these efforts and the benefit to the patient is the resulting improved health care.

Dedicated to this philosophy, the Committee on Continuing Education, made up of interested faculty members with additional representation from organized physician groups, annually prepares a comprehensive program designed to provide relevant and new information to Maryland physicians. Both the type and manner of the program, as well as their instructional design, are varied in order to satisfy the learning needs of as many physicians as possible. A special effort is made to provide learning situations in the local hospital and other health care settings where the physician interacts daily. A natural basis for meeting this goal is the affiliations program of the School of Medicine.

On a voluntary basis, the medical school provides advice and expertise for local continuing education activities. A wide variety of one to three-day symposia are presented each year on general and subspecialty topics of current interest. Other courses are offered also on the University campus and range from weekly grand rounds in the various major disciplines of medical practice to special evening refresher courses.

Another important effort is the opportunity given the practicing physician who wishes to return as a trainee to the medical center. The physician, based on individual determination of his desires and needs, enters a refresher course of graduate training for a limited period of time, varying from one to several weeks. The trainee works closely with housestaff, medical students and fulltime faculty, participating actively in the management of patients, attending pertinent conferences and engaging in special tutorial sessions with preceptors who guide his reading and comprehensive review of the area of his interest.

Additionally, the Office of Medical Education makes the resources of the medical school available for instantaneous consultation with practitioners throughout the state via a lending library of audiovisual and other aids.

Of course, close contact is maintained with the other providers of continuing education within Maryland. Thus, the medical school participates in the planning of the programs at the annual and semi-annual meetings of the Medical and Chirurgical Faculty of Maryland as well as local medical societies and other special groups who offer continuing education to community-based physicians.





## **COURSE OFFERINGS**

## ANATOMY

The Department of Anatomy provides instruction in the various aspects of basic medical science included under the general term "anatomy". Courses are offered to both medical students and students working towards a MS or PhD. The primary educational goal of the department is to enable students to obtain a basic understanding of the structure of the human body as it is related to function. Where relevant, important clinical and research applications of the material under study are described. The study of human structure includes all levels from gross morphology, seen in the dissecting room, to fine structure as revealed with the electron microscope. Special emphasis is placed on the study of neuroscience where neuroanatomy is taught in an integrated format with neurophysiology and other aspects of neurology.

Anatomy, a wide-ranging and comprehensive subject, is essential to the proper understanding of clinical practice. Being a broad and relatively precise discipline, there is a heavy demand upon each student's ability to study in his or her own time. Accordingly, the courses are designed more to help students with their own learning process than to provide a comprehensive treatment of the material under study. For this reason, both a theoretical and laboratory approach is adopted in course work, and materials are made available for individual study. Through placement examinations, students with a prior knowledge of the material may gain exemption giving them additional time to pursue their own special academic interests.

All fulltime members of the department are actively engaged in research; the diversity of which reflects a wide range of interests, both pure and applied in nature.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MANA 505. Genetics.** This course is primarily designed for nursing students. Basic principles of human and medical genetics are stressed with attention given to underlying mechanisms of genetic disorders of man. Other areas developed are congenital malformations, developmental genetics, probability and genetic counseling.

**MANA 506. Embryology.** An introductory course in the study of embryology is provided for students who have not previously studied the subject. Its purpose is to provide a background sufficient for an understanding of the study of the development of the body systems included in MANA 511.

**MANA 511. Anatomy of the Human Body.** This course provides the student with a comprehensive understanding of the morphology of the human body. The basic concepts of structure as they are related to function are described in lectures and demonstrations and through audiovisual media. Laboratory facilities are provided for the study of osteology and prosected material and for dissection of the human body. The course includes instruction in living anatomy, embryology, roentgen anatomy and important clinical applications.

**MANA 512. Histology.** This course offers students a basic knowledge and understanding of the microscopic structure of the human body. The interdependency between structure and function in the different tissues and organs of the body is emphasized. Clinical and research applications of the course material are also stressed. Histological slides are provided for laboratory study and audiovisual material is available for individual study.

**MANA 513. Neurological Sciences.** This course provides an integrated study of neuroanatomy, neurophysiology, neuropathology, neurosurgery and electroencephalography. The structure and function of the central nervous system is presented simultaneously. Facilities are provided for dissection of the human brain, examination of stained microscopic sections of various levels of the brain stem, and laboratory experience involving the study of functional aspects of the nervous system.

**MANA 514. Genetics.** This course comprises a series of one-hour lectures which include a basic consideration of the principles of genetics, population genetics, biochemical genetics, radiation genetics, immunogenetics and microbial genetics. Laboratory facilities are provided for an introduction to the study of cytogenetics. Special emphasis is placed on the role of genetics in health and disease.

#### *Fourth Year*

**Electives.** Gross Anatomy and a number of special electives are available to clinical and preclinical students. These are listed in the Graduate School and medical school elective catalogs.

## **ANESTHESIOLOGY**

During the first year the Department of Anesthesiology, in conjunction with various basic science and clinical departments, presents a series of lecture-demonstrations dealing with the practice of emergency medicine. In the second year the core curriculum in Anesthesiology is presented as part of the "Introduction to Clinical Practice."

In addition, during the first two years the department participates in lectures, conferences and laboratory exercises of various pre-clinical departments. Such participation is intended to illustrate the application of basic science principles to the clinical practice of anesthesiology. Emphasis is placed on the physiologic and pharmacologic basis for pre-anesthetic medication, choice of anesthesia and the management of patients before, during and after surgery.

Electives of varying orientation and complexity are provided during all of the four years. These include clinical anesthesiology, obstetrical anesthesia, and critical care medicine. Further information and details concerning the elective courses may be found in the electives catalog or by contacting the department chairman.





## BIOLOGICAL CHEMISTRY

Biochemistry is the subject that seeks to understand the phenomena of biology in terms of molecular structure and interaction. As such it permeates all of biology and medicine and is a fundamental prerequisite to other medical sciences, especially pharmacology, microbiology and pathology as well as the clinical subjects.

A teaching goal of the department is to present a concise but comprehensive lecture-conference course including as major subjects: proteins, enzymes, nucleic acids, intermediary metabolism of major food stuffs, energy production and utilization, chemical aspects of hormones, protein and nucleic acid biosynthesis and biochemical genetics. In addition, the introductory medical course includes a systematic series of sessions organized with the Department of Medicine which demonstrate the application of biochemistry to the understanding of human metabolic disorders.

Because many entering students have had some exposure to biochemistry, the department offers place-out examinations and advanced seminar courses for medical students.

In connection with the elective program embodied in the revised curriculum (beginning fall, 1975), a number of special seminar-conference topics will be offered in both the January and June elective period. Details and description of course offerings can be found in the electives catalog. Additionally, students with special interests in biochemical investigation are encouraged to ask faculty members about opportunities for part-time or summer research. Limited funds have been available to support part-time research assistants from the medical classes.

The department also offers a doctoral program and a series of advanced courses (see Graduate School catalog). Research interests of the staff include a number of areas in metabolism and enzymology (both mammalian and microbial), transport and membrane biochemistry, enzymology and regulation of melanin pigmentation, collagen structure and metabolism, hemoglobin biochemistry, genetics and morphogenesis of viruses, and regulation and synthesis of glycoproteins.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBIC 510. Biochemistry.** An introduction to the later preclinical and clinical subjects, the course is presented in the first semester and is oriented toward mammalian metabolism and enzymology and those aspects of general biochemistry common to all organisms. Conferences are offered throughout the semester. They allow enrichment of the core material and have the added advantage of smaller groups. A separate, but closely related course, correlative medicine, brings clinical correlation to the biochemical material in a series of weekly presentations of scientific clinical lectures, sometimes centering around a patient.

### *Fourth Year*

**MBIC 548. Research Elective.** This gives the student the opportunity to work with various faculty members in the following areas: 1) amino acid metabolism, collagen structure and metabolism, and amino acid racemases and epimerases; 2) biochemistry and genetics of virus development and assembly as well as regulation of development; 3) physical-chemistry and chemistry of proteins; 4) microbial metabolism and physiology as well as membrane transport of amino acids; 5) regulation of enzyme action by allosteric interactions; 6) melanin formation and its regulation in mammals; 7) membrane structure and function in microbial systems, and 8) membrane glycoprotein and phospholipid biosynthesis.

## BIOPHYSICS

It is the aim of the Department of Biophysics to provide medical students with a background in the physicochemical principles necessary to an understanding of physiology and the neurosciences.

The department offers a program of graduate study leading to the PhD degree. Study programs are flexible and depend on the preparation and interests of the student. Arrangements for a combined MD-PhD program are available on an individual basis.

Information regarding requirements, graduate courses offered, and research interests of the staff are available from the department at 660 W. Redwood Street, Baltimore, Md. 21201. Deadline for graduate applications is March 1.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBPH 510. Principles of Biophysics.** This course is given in cooperation with the Department of Physiology and is required of medical students. It is comprised of an introduction to cell physiology with special emphasis on osmotic and electrolyte balance in cells, as well as the processes underlying the generation of the membrane potential, the mechanisms involved in electrical excitation of nerve, and the transfer of excitation across synapses.

### *Fourth Year*

**MBPH 541. The Application of Computers to Medicine Elective.** This program introduces the student to the potentialities for the utilization of computers in medicine. Each student will have an opportunity to acquire experience using a teletype terminal to interact "conversationally" with one of several computers. The techniques needed to undertake digital simulation of physiological processes, statistical analysis, plotting and FORTRAN programming will be presented. To benefit from this course, a student should have a mathematical sophistication at least at the level of college calculus.

## FAMILY PRACTICE PROGRAM

Family medicine at the School of Medicine is considered to be a specific academic as well as a medical care discipline. Training for those interested in becoming family physicians begins soon after entrance into medical school, continues through the undergraduate curriculum, extends into an approved residency training program and is continued throughout the active practice years in special continuing medical education programs.

The goal of the Family Practice Program is to train family physicians to be specifically skilled to serve at the point of entry into the health care system. This training prepares them to accept responsibility for their patient's or family's total health care, in a continuing and comprehensive manner, regardless of age and within the context of any given environment. The total approach to medical care is stressed and includes preventive, prospective, episodic, emergency, inpatient, ambulatory, advisory, rehabilitative and counseling techniques.

The school provides an equal academic opportunity for all of those who choose family practice as a way of professional life by providing for an adequate program with a fulltime staff of experienced family physicians, a sphere of clinical responsibilities, a model family practice setting and a "track" which medical students will be able to follow in the developing curriculum from the MD degree to the

postgraduate years. Such a program is made possible by the extensive interdisciplinary teaching approach developed in conjunction with departments of internal medicine, pediatrics, psychiatry, obstetrics-gynecology, surgery, as well as many of their related subspecialty areas.

Teaching vehicles include the assignment of a spectrum of representative families, a model family practice partnership office, preceptorships, community hospital exposure, community health participation, controlled practice experiences, and research in basic health care.

## UNDERGRADUATE MEDICAL PROGRAM

At the time of this printing, the medical school is revising its entire curriculum. By September 1975, it is anticipated that the preclinical and clinical years will contain both required and elective curricula in Family Medicine. Such curricular opportunities will enable a student to have adequate exposure in Family Medicine or, if he is already familiar with Family Medicine, an opportunity for his commitment to grow. Presently, the following electives are offered:

### *First Year*

**Introductory Family Practice Preceptorship Elective.** The freshman student is provided an early opportunity to have patient contact in a community setting in the private physician's office. This is a brief office visitation experience conducted on a half day a week basis in the second semester. This encounter will start to implement the biologic fundamentals that the student is accumulating for practical use in patient care.

### *Second and Third Years*

**Extended Family Practice Preceptorship Elective.** These preceptorships should enable the student to gain insight into the medical way of life of a family physician in community private practice and to demonstrate what family practice is — the varied scope of the work and the diverse problems encountered. This experience will serve to clarify for the student the physician's place in society, his social and civic obligations and his responsibility to his patients. Thus, the student may more fully grasp the true nature of private practice and the need to understand each patient in relationship to his family, his job and his total environment.

The preceptorship provides a brief period away from the medical school setting during which the student can develop mature ideas concerning his own values and goals. Observation of the practicing physician in his working environment affords the student an opportunity to develop a true perspective of the patient-physician relationship. It also permits the student to participate almost totally in a "medical way of life" with a dedicated physician carefully selected by the medical school.

### *Fourth Year*

**FAPH 541. Introduction to Family Practice Elective.** A longitudinal exposure to the provision of primary continuing and comprehensive medical care within the context of the family and community. The purpose of this course is to expose the student to family practice as a basic health care system in a model family practice office working with practicing physicians. The student will be exposed to a model business office, the total life health record, the model family office laboratory, the model family practice partnership and an appropriate exposure to the medical economics of practice. Discussions will be conducted as to how to select a community in which to practice and how to set up a practice. This course is from 8-12 weeks in duration and if a student desires, he can be provided with an actual private practice experience at the conclusion of this elective.



**Advanced Preceptorship Elective.** The preceptee (student) serves with a family physician (preceptor) and is given an opportunity to observe and participate in family practice in an actual practice set-up. He works the same hours as the family practitioner, serving as his assistant. Under supervision of the preceptor, he is assigned his own patients and families to work up. He is expected to recommend a course of treatment and to follow these families during the period of preceptorship. His duties include work in every facet of the preceptor's practice — his office, in the patient's home, his hospital, nursing home, extended care facility, with his hospital staff, county medical society, community service organization, community school system and his social service and local health departments.

In addition to the desired clinical practice exposure, the preceptee will gain insight into the family physician's lifestyle by virtue of this close association. And, the preceptee sees first hand the community's varied medical needs and opportunities. Through the preceptee's practical experience it is hoped this will be one of the means of discovering his strengths and weaknesses.

The duration of this course is 8-12 weeks. Inner city, suburban or rural practice locations will be arranged, depending on the preceptee's interest. The student applicant is required to have a conference with the family practice program director before this elective is assigned in order to assure complete understanding of the elective's purpose, to assure the desired location and availability of the desired preceptorship. By individual arrangement, the preceptee may or may not live with his preceptor. There is no stipend associated with the above described elective preceptorship. There is a separate family practice preceptorship (up to three months) available to seniors during their vacation period which does permit the paying of a stipend to the preceptee.



## GRADUATE MEDICAL PROGRAM

Maryland's three-year approved Family Practice Program is historically the third oldest in the country. Its goal is to provide a full breadth of family practice training that is required by the essentials of a family practice residency. Governed by these essentials and implemented by innovative educational methods is a philosophy designed to educate a physician in all aspects of modern family practice, as established in the "Core Content of Family Practice." Flexibility is built into the program to accommodate the specific need of the trainee and the basic health care needs of the community in which he will eventually serve as an individual practitioner or as a member of a group.

Training is provided in internal medicine, pediatrics, psychiatry, obstetrics and gynecology, surgery, community medicine and related subspecialty areas by three methods — on rotation in the specific departments, as a continuum in the model family practice unit, and in select community hospitals.

At the School of Medicine the model unit is known as the "Family Health Center" which is located on the first floor of the north wing of University of Maryland Hospital. The Center functions as a family practice partnership. In addition to being the home or office of the family practice resident, the Center contains demonstrations of models of: (1) a total life health record system; (2) a model office clinical laboratory; (3) a model business office; (4) a model of clinical pharmacist participation, and (5) a model emergency and therapy suite.

Emergency medicine is required through the years. Family practice residents admit and care for in-hospital patients. Research requirements and opportunities are included. A unique controlled practice experience, followed by an adequate elective period, climaxes the formal residency program. Continuous attention is paid toward the goal of each candidate successfully passing the examination for certification by the American Board of Family Practice.

An optional fourth year fellowship is available by special arrangement for candidates desiring further training in one of the traditional specialties or subspecialties to meet the particular needs of the applicant and the geographical area in which he intends to practice, or those who wish to prepare themselves in careers of academic teaching or research positions in family practice.

## CONTINUING EDUCATION PROGRAMS

This phase of the Maryland program is based on the philosophy that the family physician's education must be a continuum throughout his entire practice career and for the additional purpose of preparing each graduate to successfully pass each recertification examination as required by the American Board of Family Practice. Every practicing family physician who desires, especially the Maryland graduate, is provided the opportunity of being an active faculty member of the family practice department by fulfilling the continuing education requirements.

A variety of continuing education programs is offered, ranging from specific short didactic courses to extensive in-depth courses in system-oriented clinical subjects, to tailored individual courses to fulfill the specific needs of a physician. Information on current and projected courses is available at all times from the Family Practice Program, on request.

## INTERNATIONAL MEDICINE

In accordance with objectives of the International Health Research Act of 1960, International Centers for Medical Research were created under the auspices of the National Institutes of Health to advance the status of international health research and training. Congress further expressed the hope that "a program through United States universities for the early development of research and research training centers with adequate field opportunities for international studies" would be established.

Thus the Office of International Research of the National Institutes of Health provided for the establishment of a research and training center at the University of Maryland School of Medicine in March, 1961. The University of Maryland International Center for Medical Research conducts active research-training programs both in Baltimore, Maryland and abroad in Lahore, Pakistan.

The programs share these objectives:

- To offer research training in international health problems to American physicians and allied professional workers as well as to their counterparts abroad.
- To conduct medical allied research at the domestic and overseas sites.
- To create, through scientific endeavors, an atmosphere of mutual understanding and friendship between the host nation and the United States.

## GRADUATE STUDIES

The research associate program provides for postdoctoral training in the various disciplines represented within the Institute of International Medicine and affiliated departments of microbiology and medicine.

Upon entry into the program each research associate establishes, with his advisor's aid, a definitive plan of study and research. Assignment to divisions and appointment to advisors depend upon the candidate's background, interests and needs. The global concept of medicine is emphasized and provision is made for more advanced training in specialized aspects of international health. Following a basic orientation course, each research associate proceeds into one or another of specialized training areas. During this time he begins a preceptor-type training via a research project which also prepares the candidate for field work.

Postdoctoral candidates with PhD, MD, and DVM degrees enter into one of several specialized programs soon after appointment to the program. These include infectious disease-microbiology, nutrition, medical entomology and epidemiology. Often, overlapping interests will result in combined training and joint research projects. In some cases additional clinical training of physician candidates will be considered essential to the success of the overall program.

Applications should be submitted to the department chairman.





## MEDICINE

Teaching the broad and specific principles of internal medicine to students and housestaff through patient care and clinical research is the department's principal objective. This cannot be accomplished unless patients are studied thoroughly utilizing modern medical techniques which are conducted within an environment conducive to learning. Each subspecialty group is expected to practice the general principles of medicine and perform specialized research. When indicated for the intelligent study of patients' problems, new and specialized diagnostic procedures are provided, such as catheterization, endoscopic and isotope procedures, and application of specialized biochemical, microbiological or immunologic tests.

In their teaching, attending physicians are expected to show the practical aspects of elaborating the medical history, perform a thorough physical examination and utilize definitive techniques which are often performed by consultative subspecialty teams. Rendering care to ambulatory patients in the medical clinics and emergency room is an aspect of practice upon which greater emphasis is placed. In the hospital and clinic settings, attempts are made to emphasize patient care and proper protection of the dignity of the individual.

## FELLOWSHIPS

**Summer Fellowships.** Students who have completed their sophomore year are encouraged to seek additional training during the summer months preceding their junior studies. This training may be obtained in one of several ways. A limited number of students are appointed to clinical clerkships on the medical wards of the University of Maryland Hospital. In these positions they are responsible, under supervision, for the history, physical examination, laboratory studies and the progress notes of assigned cases.

In addition, certain of the medical subspecialty divisions provide specialized training for students as fellows during the summer months. The applicant is encouraged to apply directly to the division head. These fellowships enable the student to become acquainted with the various specialized diagnostic and research techniques, the clinical problems and therapeutic regimens peculiar to each of the medical subspecialties. Summer fellowships are available in the following divisions: cardiology (2); dermatology (2); endocrinology (2); gastroenterology (2); hematology (2); nephrology (2); infectious diseases (4); and clinical physiology (2).

Interested applicants should contact the respective division head prior to January 1 of the year in which the fellowship is desired. In many instances, a fellowship award is made providing remuneration for two or three of the summer months.

**Postgraduate Fellowships.** These are available in the various specialties of medicine. For details see the specific division.

## UNDERGRADUATE MEDICAL PROGRAM

### *Third Year*

**MEDC 530. Clinical Clerkship.** This course consists of a clinical clerkship on the medical wards of the University of Maryland Hospital or the Baltimore Veterans Administration Hospital for a period of 12 weeks. Students are responsible, under supervision, for the history, physical examination, laboratory examinations and progress notes assigned cases. They attend ward rounds and conferences in general medicine with the resident staff, attending physicians and chief of service. The clinical clerk is given instruction in the keeping of medical records including a modified problem-oriented record. He participates in a daily audit of the medical record with the medical house staff which serves to provide more efficient hospital care.

### *Fourth Year*

**MEDC 541. Medical Clinic-Adult Ambulatory Medicine Elective.** The student is offered two choices: 1) morning is spent in the adult medical clinic with responsibility for total patient care, and may spend the remainder of the day under the supervision of the medical admitting officer assisting in the management of emergencies and urgent problems; or 2) morning is spent in the medical clinic and afternoon attending subspecialty clinic or clinics of his choice.

Students are assigned to the Primary Care clinics where they gain experience with ambulant patients, gaining insight into the importance of the medical record, techniques of medical audit and the role of the allied professionals such as the nurse practitioner and the clinical pharmacist in the delivery of health care.

## Division of Cardiology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**Clinical Cardiology Elective, University of Maryland Hospital.** Students participate in patient evaluation and examination under the close supervision of faculty members. Basic concepts of physical examination are stressed and correlated with both non-invasive and invasive techniques of more detailed evaluation. The rotation includes an opportunity for adult and pediatric cardiology training in the clinics, coronary care unit, and graphics laboratory with emphasis on complete patient evaluation as well as for development of individual areas of interest.

### POSTGRADUATE FELLOWSHIPS

Selected applicants participate in the activities of the division including responsibilities for cardiac catheterization, electrocardiographic interpretation, vectorcardiographic interpretation, phonocardiography, echocardiography, and exercise testing. The fellowships begin July 1 of each year and a financial stipend is provided. Application is made through the head of the division and should be completed by November of the preceding year.

## Division of Dermatology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Third Year*

**DERM 530. Introduction to Dermatology.** Students are given assigned reading on the more common skin eruptions. Nine two-hour clinical sessions are held for each quarter of the junior class. Individual instruction is given by one of the senior staff members emphasizing the pertinent aspects of differential diagnosis.

*Fourth Year*

**DERM 541. Dermatology Elective.** Emphasis is on the method of diagnosis and treatment of conditions in which skin eruptions play a major role.

**GRADUATE STUDIES**

The division is approved by the American Board of Dermatology for the three years of training which is required by the board for certification. Residents and fellows spend a part of the training period at the Rosewood State Hospital for Retarded Children, Veterans Administration Hospital, Mercy Hospital and in private offices of the members of the staff.

**Division of Endocrinology and Metabolism**

**UNDERGRADUATE MEDICAL PROGRAM**

*Fourth Year*

**ENDO 541. Clinical Endocrinology and Metabolism Elective.** This course provides seniors with a broad clinical experience that is accomplished through a four-week concentrated period of training devoted mainly to a study of patients with clinical disorders of endocrine function. Students assist with the day-to-day management of these patients under the supervision of a staff member. A separate elective of 12 weeks is also available to interested students who may desire a longer period of training and/or wish to pursue a clinical or laboratory research project.

**Affiliated Hospital Electives.** Electives in Endocrinology are available at York (Pa.) Hospital and the Baltimore Veterans Administration Hospital.

**POSTGRADUATE FELLOWSHIPS**

Fulltime positions are available to selected candidates who have usually completed two or more years of house officer training. Fellows participate in ongoing research projects and independent investigations are encouraged. These trainees also participate in all clinical activities within the division. A financial stipend is provided. Applications may be made through the division head.

**Division of Gastroenterology**

**UNDERGRADUATE MEDICAL PROGRAM**

*Second Year*

An intensive two-week course on topics in GI is presented as part of the overall Subject Systems Teaching.

*Electives*

The Division at University and Baltimore Veterans Administration hospitals offers elective experiences, both clinical and laboratory, to students at all levels in the medical school. Laboratory experiences generally require eight- to ten-week blocks of time; clinical experiences are limited to third and fourth year students. Any student may participate in weekly clinics at either University or the Baltimore VA Hospital for practical guided experience in the care of the GI patient or in the weekly GI Conference held in rotation at the various hospitals.

**POSTGRADUATE FELLOWSHIPS**

Two to four fellowships are available for those completing training in Internal Medicine.



## Division of Hematology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

Members of the division are responsible for the first semester part (hematology) of the sophomore course in clinical pathology. Clinical and laboratory aspects of blood dyscrasias are covered with an introduction to blood group immunology.

#### *Fourth Year*

**HEMA 541. Clinical Clerkship in Hematology Elective.** As a clinical clerk, the student will participate in all clinical activities of the Division of Hematology and will be considered as an integral part of its staff.

**Hematology Elective, York (Pa.) Hospital.** Inpatient as well as outpatient consultations will be seen and appropriate diagnostic hematology procedures will be reviewed.

### POSTGRADUATE FELLOWSHIPS

At least one fulltime fellowship in hematology is available to applicants with a minimum of one year internship. A stipend is provided.

## Division of Infectious Disease

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**INFE 541. Training in Infectious Diseases Elective.** The diagnosis of infections and the proper management of patients with these diseases are taught by exposure of the student to practical, clinical, laboratory and research problems. The clerkship will include teaching rounds, both formal and informal, consultative rounds, research conferences, control of hospital infection, laboratory diagnosis, clinical research and laboratory research.

**Affiliated Hospitals.** Elective opportunities in Infectious Diseases are available at both York (Pa.) Hospital and the Baltimore Veterans Administration Hospital.

### POSTGRADUATE FELLOWSHIPS

The division sponsors four to six fellows who receive instruction in laboratory techniques and clinical investigation. A financial stipend is provided. Application is made through the division head.

## Division of Introduction to Medicine (Physical Diagnosis).

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

**PDIA 520. Introduction to Clinical Medicine.** Early in the year the entire class receives instruction in the techniques of elaborating the clinical history and in performing the physical examination. Small tutorial groups are formed under the direction of the instructor. During the first five weeks experience in examination of normal individuals is given one afternoon weekly. An integrated lecture series is given by various members of the clinical faculty. During the remainder of the year, students become acquainted with abnormal signs through examination of hospitalized patients. This practical instruction includes children and patients with neurologic, ophthalmologic and chronic diseases with instruction provided by members of the departments of pediatrics, neurology, ophthalmology and rehabilitation medicine. Members of the Division of Cardiology instruct physical examination of the cardiovascular system.

## Division of Nephrology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**Nephrology Elective, University of Maryland Hospital.** Students who have completed their required junior electives in medicine, surgery, pediatrics and obstetrics may elect a clinical rotation in nephrology. Although one month electives will be accepted, the student is encouraged to spend two months so that he will have time to use the skills developed and to become thoroughly familiar with the approach to patients with kidney disease. Students with special interest in particular aspects of kidney function or kidney disease may be permitted to pursue those after consultation with the division head.

**NEPH 541. Nephrology Fellowship Elective, Maryland General Hospital.** This elective exposes students to the practice of clinical nephrology and to the management of acute and chronic renal failure.

### POSTGRADUATE FELLOWSHIPS

Qualified physicians may apply for fulltime fellowships in nephrology. Although one-year fellowships of primarily clinical training are offered, preference will be given to those desiring two years of training.

## Division of Nuclear Medicine

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**NMED 541. Nuclear Medicine Elective, York (Pa.) Hospital.** Basic instruction in radioisotope technique and applications to both diagnosis and therapy are presented which includes active participation in clinical evaluation of patients seen in a busy nuclear medicine department.

### POSTGRADUATE FELLOWSHIPS

Applicants must have completed internship and a minimum of one year of residency either in medicine, radiology or pathology. The fellowship will be for not less than two year.

## Division of Pulmonary Diseases

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

Members of the division take part in the teaching of the physiology course with emphasis on the clinical application to basic respiratory physiology. This includes an introduction to clinical medicine and the sessions in the course on correlative medicine.

#### *Second Year*

During the subject systems portion of the second semester, a period of two weeks is devoted to the respiratory system. The teaching of clinical medicine is integrated with epidemiology, pharmacology, microbiology and closely correlated with the teaching of physiology and pathology. This does not attempt to provide a course in respiratory diseases but the most common and most important groups of diseases are included.

*Third Year*

During the rotation on medicine at the University of Maryland and affiliated hospitals (Baltimore VA Hospital, Maryland General Hospital and Mercy Hospital), junior students have the opportunity to make contact with faculty members and fellows during clinical ward rounds on patients with pulmonary disease. A weekly pulmonary conference is held at each of these hospitals where students have an opportunity to present cases from their wards.

*Fourth Year*

In the ambulatory care portion of the curriculum, senior students have an opportunity to spend one afternoon during each week in the Western District Chest Clinic. They see patients during the early part of the afternoon, present them to faculty members or fellows and attend a one-hour x-ray oriented conference at which a wide variety of pulmonary problems is presented.

**PULM 541. Pulmonary Diseases Elective.** Experience is given in the areas of clinical medicine and applied physiology with emphasis on correlation of clinical, roentgenographic and physical findings.

## Division of Rheumatology

### UNDERGRADUATE MEDICAL PROGRAM

*Fourth Year*

**RHEU 541. Rheumatology Elective, University of Maryland Hospital.** The course is set up to provide sufficient basic clinical, radiologic and laboratory background in the field of rheumatic diseases. The student will be exposed to current clinical problems by way of consultations and routine outpatient clinics at the University of Maryland and Baltimore Veterans Administration hospitals. Additionally, a monthly adolescent connective tissue clinic is held at University. Various aspects of treatment including drug therapy, physical medicine and rehabilitation as well as orthopedic surgery will be presented and discussed. The student will also be exposed to various diagnostic procedures such as arthrocentesis, clinical analysis of joint fluid and other diagnostic procedures currently available in the arthritis laboratory that are applied for clinical and research purposes. Rheumatology conferences are scheduled at the University of Maryland Hospital.

## MICROBIOLOGY

Training in microbiology within the medical school curriculum occurs primarily during the sophomore year when all students are required to take medical microbiology and immunology. In addition, a substantial number of seniors take clinical immunology during the elective portion of their training. Individual staff members provide instruction and guidance throughout the entire medical curricula.

The department also offers a MS and a PhD. While the MS may be offered in special instances, priority for research facilities will be given to PhD aspirants. This department encourages students who wish to enroll in the MD-PhD program.

Emphasis is placed on the medical aspects of microbiology. Varied research programs are available and opportunities are open for experience in teaching and in diagnostic bacteriology and serology. Ecological studies on rickettsioses and arboviruses in overseas areas are also available for interested students.



**UNDERGRADUATE MEDICAL PROGRAM***Second Year*

**MMIC 520. Medical Microbiology and Immunology (8).** First semester. Four lecture hours and eight hours in laboratory and group conferences per week. This course begins with an introduction to basic principles of immunology and then proceeds to consider the major groups of bacteria, spirochetes, fungi, rickettsiae, viruses and parasites that cause human disease. Emphasis is placed upon an analysis of the properties of microorganisms thought to be important in disease production, pathogenesis of infection and interaction with host mechanisms, epidemiology, and control measures.

*Electives*

Students are encouraged to take elective work throughout their undergraduate training. The following are specifically designed for medical students:

MMIC 541. Clinical Immunology.

MMIC 542. Medical Zoology and Parasitology.

MMIC 543. Principles of Ionizing Radiations.

MMIC 548. Research in Microbiology.

A number of graduate school courses are also available to qualified students. Interested students should contact the department for details.

**NEUROLOGY**

Neurology is broadly, but properly, interpreted as the study of the nervous system including central, peripheral and neuromuscular systems. It includes basic and clinical aspects of the human nervous system, both normal and diseased. Accordingly, department members participate in planning and delivering course material in all four years of undergraduate medical education. While it is recognized that only a relatively small number of medical students will choose careers in medical or surgical neurology or in the basic neurosciences, it is believed that all medical graduates must have sufficient understanding of the basic structure and function of the nervous system to perform a satisfactory neurological examination, recognize and treat the many common neurological disorders and know when to refer the patient to a neurological specialist. Of special importance is the ability to distinguish between functional and organic neurological symptoms or signs.

While the organization of the postgraduate program of the department, as well as the interests and the abilities of the fulltime faculty, are especially suited to the training of academicians and investigators, the department recognizes its responsibility also to train neurologists who will practice their specialty in this community and state.

The discipline of neurology has maintained its traditional ties with basic science and by its complex but logical nature has typified the scholarly aspects of medicine. Recent methodological and scientific advances have created a new and therapeutically-oriented specialty which is represented in the philosophy and goals of this department.

## UNDERGRADUATE MEDICAL PROGRAM

### *First and Second Year*

**NEUR 510. Neurological Sciences I.** Lecture demonstrations of clinical cases constitute an integral part of this course. There is emphasis on correlation of anatomy and physiology with clinical material. Neurologic aspects of physical diagnosis are taught in both the first year and second year of medical school with instruction in performance of the normal neurologic examination as well as examination of selected patients with neurologic disorders.

**NEUR 520. Neurological Sciences II.** In conjunction with the Department of Pathology, and with contributions from other clinical and basic science departments, there is a correlative course given in the second year of medical school in which pathology of the nervous system is correlated with clinical disease.

### *Third Year*

**NEUR 530. Clinical Clerkship.** Members of the third-year class may take a clerkship on the neurology ward at University of Maryland Hospital or the hospital's private service for a period of three weeks. Under housestaff and attending staff supervision, the students are responsible for the care of patients with neurologic disease. They may assist in the performance of some procedures and attend rounds and conferences in neurology. A didactic series of 12 lecture-demonstrations is given to these students as well as those who are serving a clerkship in the Department of Psychiatry.

### *Electives*

**NEUR 541. Clinical Electives.** After completion of third year, students are offered a variety of clinical experiences on the neurological services at: University of Maryland Hospital, Mercy Hospital, Montebello State Hospital, St. Agnes Hospital, Baltimore Veterans Administration Hospital, and York (Pa.) Hospital. The neurologic examination of the patient is emphasized, as well as the study and application of a wide variety of specialized neurologic diagnostic techniques. Each student will become proficient in the taking of a neurologic history, the performance of the neurologic exam, the formulation of a reasonable diagnostic impression or differential diagnosis, a plan of investigation and management for several of the more common neurologic problems.

**NEUR 548. Neurological Research Electives.** In all four undergraduate years, a limited number of students will have the opportunity to work with individual members of the department in the following areas: 1) cerebrovascular physiology; 2) neuromuscular research; 3) neurophysiology; 4) electron microscopy, and 5) neurochemistry. The student will learn the principles and methods of investigating a problem. He will be involved with ongoing research and in some instances, especially with the longer electives, publication of results will be possible.

## GRADUATE STUDIES

There is a fully approved three-year program in special training in neurology at University of Maryland Hospital. This provides for clinical training as well as rotation through the associated basic science disciplines. Fellowships with a stipend are provided and begin July 1 each year. For further information contact the department chairman.

## FELLOWSHIPS

Students who have completed their first, second or third years and have an interest in neurologic sciences may apply for additional training in clinical neurology or in one of the research laboratories of the department. Qualified students may receive remuneration as fellows for the ten-week fellowships taken during vacation periods.

## OBSTETRICS AND GYNECOLOGY

The Department of Obstetrics and Gynecology emphasizes three areas of concern — education, research and service.

Educationally, the department provides a learning experience that encourages each student, regardless of ultimate career choice, to develop professional attitudes, diagnostic skills and knowledge relevant to the human female and to her sexual reproductive system. This experience enables each student to assume more effective responsibility for the general delivery of health care to the adolescent, adult and aging female and to the newborn.

The student is taught to recognize more accurately those patients who require special gynecologic consultation. He gains insight into such health-related social problems as family planning and other aspects of population control, sexual difficulties, sterilization, induced abortion and unwed pregnancies.

The educational material is presented in such a way as to familiarize students with all sources of knowledge relevant to these subject areas so that each may extend his knowledge and skills in a direction and depth appropriate to his current and ultimate career goals. The student's attention is also directed to areas in which available knowledge is deficient with the attempt to stimulate him to take advantage of elective opportunities in basic, clinical and social research.

The service roles focus on the general areas of obstetrical and gynecologic care. Obstetrics deals with a high-risk pregnancy population and provides excellent educational opportunities for both student and resident. Specialty clinics in endocrinology, complicated pregnancy, cancer, preoperative and postoperative evaluation and family planning provide specific, specialized areas of instruction in addition to rendering service to large numbers of patients.

Cancer detection and therapy plays a major part in the gynecologic program.

The department is heavily committed to the use of audiovisual aids for the enhancement of the educational experience of both medical student and resident. The faculty also contributes to the postgraduate educational programs at University of Maryland Hospital and throughout the state.

## UNDERGRADUATE MEDICAL PROGRAM

### *Third Year*

**OBST 530. Clinical Clerkship.** Students are assigned to obstetrics and gynecology for a period of six weeks. As clinical clerks they participate in the original diagnostic studies, pelvic surgical procedures and postoperative care of hospitalized patients. Instruction in prenatal and gynecologic outpatient care is accomplished in the Outpatient Department. Seminars and departmental conferences with the attending staff and house officers are employed for teaching the art of correlating observations, diagnosis and therapy. Frequent and close contact with faculty staff is achieved by means of a preceptorial system which assigns a group of two or three students to a member of the faculty for the entire clerkship. As an alternative to the clerkship at the University of Maryland Hospital, a similar instructional program is offered to a limited number of students by the obstetrics and gynecology department at Mercy Hospital.

### *Fourth Year Electives*

**OBST 541. Obstetrics and Gynecology Elective.** The student may choose to rotate through a variety of areas within the department or he may spend his time more intensively in a specific area.

**Affiliated Hospitals.** Electives are available at: Maryland General Hospital, York (Pa.) Hospital, Provident Hospital, and Mercy Hospital.



## OPHTHALMOLOGY

The Department of Ophthalmology participates in the Introduction to Clinical Practice courses given in the first and second years. During the freshman year, emphasis is placed on achieving competence in performing an ophthalmological examination and emergency care for ocular problems. Self-instructional material is used to learn the technique of ophthalmoscopy.

During the sophomore year, the techniques necessary for a complete ophthalmological examination are reviewed. In addition, aspects of clinical ophthalmology are covered in small group discussions, plus self-instructional material.

Students interested in a more complete experience in ophthalmology may elect a clerkship during the senior year at the University of Maryland Hospital, Mercy Hospital or Maryland General Hospital. Time is divided between outpatient, ward and operating room. Conferences and Grand Rounds are included in the program.

Students and physicians are encouraged to attend Grand Rounds on Tuesdays from 8:30 A.M. to 10 A.M., and to refer patients with ocular problems for examination. Discussion of differential diagnoses and possible methods of therapy are included.

## GRADUATE PROGRAM

A three-year residency program providing clinical training is offered at University of Maryland Hospital, with a rotation to Mercy Hospital. Appointment is by application to the Department of Ophthalmology, University of Maryland Hospital.

## POST-GRADUATE PROGRAM

Special courses for both non-specialists and ophthalmologists are given at various times throughout the year by the Department of Continuing Education.

## PATHOLOGY

The primary goal of the Department of Pathology is the better understanding of human disease with emphasis on mechanisms of disease and changes occurring at the subcellular level and in molecular terms. The student achieves this goal in three phases: 1) by acquiring the basic principles of pathology and applying those principles to the diagnosis and study of health care delivery as expressed in diagnostic areas such as surgical pathology, clinical pathology, cytology, forensic pathology and autopsy pathology; 2) by establishing a philosophy of critical evaluation and judgment concerning the problems of health and disease in humans, and 3) by developing feelings of personal responsibility and ethics for the practice of medicine.

The department's philosophy is that the study of disease includes both structure and function and is carried out from the level of the patient to that of the molecule.

The student is exposed to anatomical and clinical hospital pathology services with additional training at Baltimore Veterans Administration Hospital. Research efforts of the department include: cell injury, cancer immunology, kidney structure and function, chemical carcinogenesis, cell immunology, red cell metabolism and chemical test methodology.

The department conducts educational programs for undergraduate, medical, graduate, postdoctoral students and residents.

**UNDERGRADUATE MEDICAL PROGRAM***Second Year*

**PATH 501. General, Systemic and Experimental Pathology.** The course starts with the study of the basic principles of pathology and progresses with the study of diseases of the various organ systems. In the second semester, instruction in diseases of the organ systems is correlated with other departmental offerings and "Introduction to Mechanisms of Disease" through the subject systems committees. Teaching is chiefly by the case method using fresh and fixed autopsy cases but utilizes gross museum specimens and a set of prepared histologic slides. Students assist in the performance of autopsies in small groups, prepare final protocols and present the findings and interpretation of the cases to others in the class. In addition, a block of time devoted to basic forensic pathology is incorporated in the second year course. Included in the course is an introduction to experimental pathology by two experiments illustrative of basic pathologic principles.

**CPAT 502. Clinical Pathology.** The course is designed to train the student in the performance and interpretation of the fundamental laboratory procedures used in clinical diagnosis. During the first semester, the basic techniques of hematology as well as clinical aspects of blood diseases are taught.

**CPAT 503. Clinical Pathology.** In the second semester, the performance and interpretation of tests used in the diagnosis of renal, hepatic, gastric, pancreatic and metabolic diseases are considered. A review with clinical applications of acid-base balance and electrolyte disturbances is included. Methods of examination of cerebrospinal fluid, transudates and exudates are taught. Elements of clinical parasitology complete the work in this semester. Each student provides his own microscope and blood counting equipment. A completely equipped locker is provided for each student.

**ELECTIVES**

Supplementing the core program are 20 course offerings for freshman, sophomore and senior medical students. These opportunities span a wide range of departmental activities from system-oriented courses such as in renal, pulmonary, introductory neurochemistry or cardiovascular pathology to task-oriented instructions such as environmental pathology and carcinogenesis. The latter is conducted with the aid of a number of guest speakers who are leading authorities in their fields.

Other courses are of more general interest such as seminars in clinical pathology or clinical clerkships in Baltimore area hospitals. Medical students also have access to courses in experimental pathology such as histochemistry, tissue culture or pathological biochemistry.

Most of the above mentioned courses, conforming with the 4-1-4-1 arrangement of the freshman and sophomore year, are offered in January and June while others are given during the regular semester as longitudinal electives. For course listing, time and content description consult the pathology section in the electives catalog.

**Combined Accelerated Program in Pathology (CAPP).** The CAPP will admit the first group of students in fall, 1975 in an effort to permit early specialization and target-oriented education. The track in pathology begins in the freshman year, making use of all the resources of the Department of Pathology and is oriented toward a training in the specialty of pathology. Five students are admitted during their first year. They are required to fulfill all the requirements of the medical school program; however, they are not pledged to seek a career in the field of pathology. The training in the track program should provide the student with the knowledge of a one-year residency program. Time spent in training within the track program can count toward elective time.

## GRADUATE PROGRAM

**MS or PhD Degree.** The graduate program offers training and instruction in modern experimental pathology. Particular fields of interest presented are: instruction in pathological biochemistry, electron microscopy, immunopathology, histochemistry, tissue culture, physiology and the various fields generally considered within clinical pathology.

**MD-PhD Combined.** Interested students should consult the chairman of the department. For details of course offerings and admission requirements, see the pathology section in the Graduate School Catalog.

## PEDIATRICS

The Department of Pediatrics plays a vital and dynamic role in the educational process at the undergraduate (medical school), graduate (residency) and post-graduate (continuing education) levels. In the education role, the department prepares the present and future physician to provide quality comprehensive medical care to children, now and in the future.

The department has broadened its concept of the children's physician to include not only the important generalist in pediatrics, but also the basic scientist, the health educator, the subspecialist, the medical center academician and the community health planner. Above all, the physician for children must be a sensitive human being which is summed up in the credo — Love, Concern and Excellence. The department's effort is to make the educational program meet the needs of the individual physician as well as to provide the best possible services for children.

A clinical clerkship experience is offered with inpatients, fullterm infants and ambulatory patients in addition to a wide variety of elective experiences including basic research, clinical research, inpatient and ambulatory clerkships, preceptorships, subspecialty programs and community pediatrics.

Twelve freshman students are entered into a four year Pediatric Tracking Program every year. Offered during the students' free time, this program provides additional pediatric information and experience to those interested students.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**PEDI 510. Introduction to Pediatrics.** Presentations illustrating aspects of growth and development of infants, children and adolescents. The course also includes the approach to children in these age groups as well as a demonstration on how to perform a physical examination of a child in each age group. These are followed by small group discussions.

### *Second Year*

**PEDI 520. Pediatric Physical Diagnosis.** Individualized experience in the performing of pediatric physical examinations and history-taking under the direct supervision of a preceptor is offered.

### *Third Year*

**PEDI 530. Clerkship.** Students are assigned as clinical clerks for a period of six weeks at the University of Maryland Hospital, Mercy Hospital, Baltimore City Hospital or Union Memorial Hospital. In each of the aforementioned teaching areas they are given clinical exposure and experience on the pediatric wards, in the pediatric ambulatory area and in the nursery area.

Regularly scheduled conferences are held covering x-ray diagnosis, cardiology, journal reviews, chart conference, neonatal mortality, case discussions and metabolic diseases. Small group tutorial discussions cover concepts of the pathophysiology and therapeutic management of pediatric patients. The total impact



of the illness on the child and family complex is emphasized and the student is encouraged to become familiar with all aspects of pediatric practice.

*Fourth Year*

**PEDI 540. Pediatric Electives.** A variety of elective experiences are available including nursery, ward and ambulatory student internships, laboratory research experiences, and subspecialty experiences. Please refer to the medical school electives catalog.

## PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

The department's objectives are to teach undergraduate medical students those principles underlying the distribution, metabolism, mechanism of action and toxicity of drugs. At the graduate level, three areas of studies are incorporated: (1) training in the various aspects of pharmacology; (2) increasing effectiveness of drugs used in treatment of human diseases; (3) researching to better understand drug action.

The graduate school catalog lists a number of graduate courses and electives offered to medical students. Arrangements for combined MD-PhD training are made on an individual basis.

## UNDERGRADUATE MEDICAL PROGRAM

*Second Year*

**MCBP 520. Medical Pharmacology.** The pharmacological basis for therapeutics is presented with an emphasis on the mechanism of drug action.

## PHYSIOLOGY

The department provides lecture, laboratory and seminar courses in the principles of mammalian physiology to students of medicine and advanced courses in special areas of physiology to graduate students, fellows and interested medical students.

## UNDERGRADUATE MEDICAL PROGRAM

*First Year*

**MPHY 501. Principles of Physiology and Biophysics.** Five lectures, one conference a week during the spring semester. A course in the principles of human physiology and biophysics covering cellular, cardiovascular, renal, respiratory, gastrointestinal and endocrine physiology. Conference periods are used for clinical correlations and small group discussions. Under some circumstances, a limited number of students may elect an alternative program of laboratory work and/or library reading with written reports and conferences.

A variety of advanced seminars and/or research in special areas of physiology are open to interested students during the elective period or other free time. Combined MD-PhD programs, requiring additional course work and original research, are offered for highly qualified medical students.

*Fourth Year*

**MPHY 542. Seminars in Physiology Elective.** Advanced graduate seminars in selected fields of physiology (e.g. cardiovascular, renal, endocrine and neural) are offered, usually two each semester.

**MPHY 548. Research in Physiology Elective.** In selected fields.

## PSYCHIATRY

The goal of undergraduate psychiatric education is an understanding of and an appreciation for the application of behavioral and psychiatric principles in patient care and health maintenance through an exposure to a progressive sequence of intellectual stimulations, clinical experiences, and appropriate contexts of professional socialization. More specifically, the curriculum aims to assist the students to: 1) acquire a foundation of knowledge regarding the psychological, sociological and humanistic aspects of the practice of medicine based on the study of the behavioral sciences and clinical psychiatry; 2) master basic interpersonal and psychiatric skills relevant to the management of patients with medical and/or emotional illness; and 3) emulate attitudes and values which enhance the professional roles and practices of a physician *vis-a-vis* his patients and his community.

The curriculum is divided into a Core Program which consists of required courses offered during the first three years of medical education and an Electives Program which provides a variety of courses (clinical, didactic and research) for the student who is interested in furthering his knowledge and experience in some aspect of the theory and practice of psychiatry and its related fields. These elective courses are offered during the January and June minimesters of the preclinical years, as well as during the eight-week elective time of the clinical years. The four-year Combined Accelerated Program in Psychiatry (CAPP) is offered as an advanced elective to selected students with a special interest in the behavioral sciences.

### CORE PROGRAM

#### *Year I*

**PSYH 510. Behavioral and Social Sciences.** (111 hours). This interdisciplinary course provides a context for the integration of diverse behavioral science contributions which are relevant to the understanding of human behavior. It is presented jointly by the Department of Psychiatry and the Department of Social and Preventive Medicine. Its emphasis is on the emergence of a broader concept of life sciences that constitute Medicine—one that views the human organism holistically as a dynamic biological system whose inherent aspects of structure, organization, ontogeny and functioning are determined or influenced by developmental, intrapsychic, interpersonal and socio-cultural factors. Course units include growth and development, general principles of psychodynamics, psychophysiology and behavioral biology, socio-cultural aspects of behavior, and health-related social systems. These are lecture-demonstrations coupled with small group discussions, as well as panel discussions of topics which allow a multidimensional analysis of behavior. This course runs through both semesters.

#### *Year II*

**PSYH 520. Introduction to Clinical Psychiatry.** (60 hours). In the first semester the focus is on psychopathology, including nosological classification, symptom identification and psychiatric diagnosis. Psychopathology is demonstrated by films, videotapes and interviews of live patients. The second semester includes psychiatric treatment methods, patient management, and selected topics in the areas of social and preventive psychiatry, forensic psychiatry, psychiatric epidemiology and history of psychiatry.

#### *Clinical Years*

**PSYH 530. Psychiatric Clinical Clerkship.** (six weeks). Clerkship consists of fulltime assignment to one of the following five hospital facilities: 1) Institute of Psychiatry and Human Behavior, 2) Sheppard and Enoch Pratt Hospital, 3) Sinai Hospital, 4) U.S. Public Health Hospital, or 5) Inner City Community Mental Health Center. All students

are required to attend several didactic sessions on Monday afternoons and Thursday mornings, including: 1) review of clinical psychiatry (two hour weekly sessions), 2) alcoholism and drug abuse (one-and-one-half-hour weekly sessions), 3) psychological testing (three one-hour sessions), 4) psychotropic drug therapy (three one-hour sessions), 5) liaison psychiatry literature seminar (one-and-one-half-hour weekly sessions), 6) psychosomatic conference (one-and-one-half-hour weekly sessions, and 7) social and community psychiatry seminar (one-and-one-half-hour weekly sessions). In addition, a half-day per week is devoted to child psychiatry. These courses are offered at the Institute of Psychiatry and Human Behavior. Also, each student spends one half-day in a field trip at the Spring Grove State Hospital.

*Institute of Psychiatry and Human Behavior* — Sixty per cent of the students are trained in this facility. The clerkship involves a concurrent assignment to the adult inpatient division, ambulatory care division, and liaison psychiatry division. The inpatient experience is structured around the assumption of responsibility for the work-up and treatment of a newly admitted patient under the supervision of a ward administrator and a resident preceptor. The student participates in staff meetings, milieu therapy activities, psychodrama sessions and preadmission home visits (in a preceptorship with a social worker), and presents his patient in a clinical case conference. The outpatient experience involves intensively supervised work with patients in the brief therapy clinic and open clinic, supplemented by a student's clinical case conference. Concurrent liaison division activities include supervised work with patients in the general hospital.

*Sheppard and Enoch Pratt Hospital* — Two students per rotation. It focuses primarily on supervised work with hospitalized patients and includes participation in milieu therapy, group therapy and ongoing staff conferences. Students also have the opportunity to work in the crisis clinic and to participate in the consultative liaison program at the Greater Baltimore Medical Center.

*Sinai Hospital* — Two students per rotation. It involves a concurrent exposure to hospitalized psychiatric patients, consultative psychiatry, crisis clinic and outpatient clinic. Students also attend ongoing seminars and conferences.

*U.S. Public Health Hospital* — Two students per rotation. It combines inpatient and outpatient experience, under close staff supervision. Students also attend ongoing conferences.

*Inner City Community Mental Health Center* — Two students per rotation. The main focus of the inpatient experience is on short-term management, family interviewing, group therapy, milieu therapy, psychodrama, and home visits. Students are also assigned to the crisis center or one of the satellite community clinics and gain field experiences within the catchment area of the program.

**Interdepartmental Collaborative Teaching.** Behavioral science teaching in certain specialized areas is contributed by several departments, including the Department of Psychiatry, within the interdisciplinary sequence Introduction to Clinical Practice (ICP). Behavioral science courses in the Year I ICP include: 1) Medical Interviewing (twelve two-hour weekly sessions), 2) Human Intimate Behavior (thirteen two-hour weekly sessions). Behavioral science courses in the Year II ICP include: 1) Psychiatric Diagnosis (six two-hour weekly sessions on psychiatric interviewing, mental status, psychological testing and psychodynamic formulation), 2) Death and Dying, and 3) Medical Ethics. In the clinical years, the Liaison Division of the Department of Psychiatry conducts collaborative teaching in surgery, medicine, and ambulatory care. The Division of Child and Adolescent Psychiatry collaborates closely in teaching, research and patient care with the Department of Pediatrics.



## ELECTIVES PROGRAM

The Department of Psychiatry offers elective courses in all four years of the medical curriculum. Elective courses scheduled in the Year I and Year II minimesters (January and June) span a variety of topics in behavioral sciences, including: human development, psychophysiology, psychobiology, medical sociology and anthropology, experimental psychopathology, psychoanalytic theory, and psychiatric epidemiology. Elective courses offered during the clinical years include: brief psychotherapy, intensive individual psychotherapy, psychiatry for the medical practitioner, community psychiatry, study of violent behavior, outpatient child psychiatry, pediatric psychiatric consultation, preventive and community psychiatry for children, alcoholism and drug addiction, family dynamics and treatment, medical hypnosis, human sexual behavior, behavior modification, theory and research in psychosomatic medicine, problems in the delivery of health care, forensic psychiatry, and inpatient psychiatry electives. In addition, the department offers elective courses in various research areas, as well as individual clinical preceptorships.

**Combined Accelerated Program in Psychiatry (CAPP).** The CAPP was initiated in 1970 by the Department of Psychiatry as a major effort to explore new approaches to medical education. This behavioral science-psychiatry track allows selected students to enroll concurrently in a basic psychiatric-specialty training, beginning in the freshman year and continuing through the four years of medical school. In addition to participating in the psychiatry program, students are required to fulfill all of the requirements of a standard four-year medical curriculum. In admitting students to the program, there is no requirement for any pledge of a career interest in psychiatry. Students are selected from among applicants with an interest in the social and behavioral aspects of medicine. Twelve students are admitted to the program per year. Currently a total of 60 students have entered the program. The track provides, from the first month of the freshman year, an unfolding progression of combined didactic and clinical experiences in the behavioral sciences and in clinical psychiatry. The completion of this four-year program enables the student to graduate from medical school with a foundation of knowledge and skills that is envisioned to be at least equivalent to that provided by one year of traditional residency training in psychiatry. Students in the program graduate from the medical school six months earlier than the rest of their class by being credited six months elective time in psychiatry. During the remaining six months, those interested in careers other than psychiatry are required to take a six-month internship in psychiatry specifically designed to meet their practice needs in the field of their choice. On the other hand, those committed to a career in psychiatry are required to take a six-month internship in internal medicine. Provisions have been made in the design of the program to integrate this undergraduate track with a two-year psychiatric training for those students who elect to complete their psychiatric training at the Institute of Psychiatry and Human Behavior of the University of Maryland. The CAPP allows track students to complete their basic medical and psychiatric specialty training in six years, and it can be further expanded to offer opportunities for subspecialization in child psychiatry or psychoanalysis, and for graduate training in one of the behavioral or biological sciences.

**Fellowships.** This eight-week program, supported by National Institute of Mental Health and medical school traineeships, is offered each summer to a dozen students. Students are assigned to the various clinical facilities of the Institute of Psychiatry and Human Behavior and participate in an intensive program which includes closely supervised clinical work, conferences and seminars, and involvement in individual clinical and research projects.

## RADIOLOGY

Since Wilhelm Conrad Roentgen, a German physicist, discovered the x-ray in 1895, its use and that of other forms of radiant energy have been greatly expanded in our society. The greatest advances have been in medicine where the use of x-rays, radium, and other radioactive materials extends to all phases of patient care.

The Department of Radiology offers the medical student an opportunity for a broad base which touches on all aspects and subspecialties of medicine. This is accomplished through departmental teaching conferences as well as many combined conferences with other clinical departments. Case discussions in conjunction with videotape, slide, and motion picture presentations enhance the learning process in order to enable the student to apply his radiographic training to any field of medicine.

The department was established in the University of Maryland Hospital in 1911, the first such in a Baltimore hospital. In 1956, separate divisions of diagnosis and therapy were established with experienced diagnostic radiologists, radiation therapists, physicists and biologists, all of whom contribute to the educational program. The newest diagnostic techniques have been added including diagnostic ultrasound, xeromammography, and sophisticated neuroradiological procedures. New methods of teaching radiology, both as a separate and integrated discipline, are continually being explored and applied.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**Radiologic Anatomy.** First semester. A correlated course is given in conjunction with the Department of Anatomy. This course consists of nine lecture-demonstrations devoted to the skull, chest, gastrointestinal tract, genitourinary tract, spine and joints. Not only is the normal anatomy shown, but the radiologic aspects of a few pathologic processes are also shown for emphasis and correlation.

### *Third Year*

**Radiologic Orientation I.** A series of nine lecture-demonstrations are given to students during their medicine rotation. Emphasis is placed upon pulmonary disease with radiologic-pathologic correlation stressed.

### *Fourth Year*

**RADL 540. Radiologic Orientation II.** Small groups of students are assigned for a period of two weeks to the diagnostic division of the Department of Radiology. Further subdivision allows individual instruction as the student rotates through the many subspecialties within the department including fluoroscopy, special procedures, neuroradiology, urography, pediatric radiology and diagnostic ultrasound. Students attend all departmental teaching rounds and conferences as well as some joint conferences with other departments. Special lectures designed especially for the medical student are given twice daily by the faculty and residents within the department.

**General Radiology Elective.** For the student interested in a career in radiology, a flexible four-week course is available. The student is expected to investigate some aspect of radiology thoroughly, and, with the aid of a faculty advisor, present his material to the residents and staff.

## GRADUATE PROGRAM

A three-year residency is offered in both Diagnostic and Therapeutic Radiology at the University of Maryland Hospital. The teaching program is carried out through patient care, under the supervision of a fulltime staff, didactic lessons, and numerous teaching conferences.



## REHABILITATION MEDICINE

Rehabilitation Medicine is a broad term referring to the medical treatment and management of patients with disability due to neuromuscular and musculoskeletal impairments and the associated psychosocial and vocational elements. Physical medicine and rehabilitation is the medical specialty most intimately involved with "rehabilitation medicine" and concentrates on specific diagnostic and therapeutic skills required in the comprehensive evaluation of impairment and the application of appropriate therapy for its amelioration or the adaptation of the individual to the impairment.

The Department has a multidiscipline structure containing appropriate elements of the allied health disciplines in addition to the specialist in physical medicine and rehabilitation (physiatrist). These are occupational therapy, physical therapy, speech pathology, social work, and vocational counseling. The Department provides diagnostic, evaluative, therapeutic, and management services for the rehabilitation of patients of all ages who have in common some disorder of mobility. Its functions are largely complementary to the activities of the other medical disciplines, and a bed service is maintained for those patients requiring in-hospital rehabilitation.

## UNDERGRADUATE MEDICAL PROGRAM

The Department participates in several interdepartmental courses, namely, Introduction to Clinical Practice in the freshman and sophomore years, and Ambulatory Care in the senior year.

Elective clerkships in clinical Rehabilitation Medicine are offered in the sophomore, junior and senior years, with the participation of Montebello Center, Sinai Hospital of Baltimore, and the Veterans Administration Hospital at Fort Howard, Maryland.

## GRADUATE STUDIES

An approved three-year residency program in physical medicine and rehabilitation is offered for those physicians wishing to specialize in this field.



## **SOCIAL AND PREVENTIVE MEDICINE**

The Department of Social and Preventive Medicine has three administrative divisions responsible for education, health services and clinical investigation. All three divisions have multidisciplinary faculties who vary in their degree of responsibility for the overall research, teaching and service programs of the department. Primary responsibilities of these divisions are described below.

The department has working relationships with the Johns Hopkins School of Hygiene and Public Health, and with Sinai, Provident, Veterans Administration and the Public Health Service hospitals as well as with the state and city health departments.

### **Division of Education**

The faculty is responsible for organizing course material and teaching pre- and post-doctoral students of the schools of medicine, nursing and pharmacy. Some courses within the division are designed to present the student with information which will be helpful to him in deciding his role in future health care programs. Elective courses and individual projects, including Clinical Medicine, are offered to medical students throughout their four years of schooling.

Faculty members conduct research for two reasons: (1) to extend his or her base of knowledge, and (2) to provide opportunities for the pre- and postdoctoral student to apply basic health care sciences to the practice of medicine. The broad areas of active research within the division are: high blood pressure and the prevention of its complications; the definition of risk factors predictive of stroke; the prevention of coronary heart disease; the planning and evaluation of personal health care services; the causes and control of cancer, and etiologic factors in congenital heart disease.

The division's general philosophy emphasizes interdepartmental, as well as interdisciplinary, learning, teaching and research. Day-to-day activities reflect this philosophy.

### **Division of Health Services**

The Division of Health Services consists of an interprofessional faculty dedicated to the application of operations research to the analysis of health care systems and to the design, implementation, surveillance and evaluation of improved forms of health care delivery as well as the training of interdisciplinary teams of health professionals and paraprofessionals. In addition, this division is concerned with the study of present health care management and design, development and evaluation of new forms of health care management.

Faculty in this area, as well as others in the department, are involved in community boards and committees which relate to delivery of health care. The division is actively involved with consumers and consumer organizations to achieve input of health care recipients in the development of improved health care systems.

Many divisional programs are conducted through the direction of the Office of Health Care Programs which is responsible for a large interdisciplinary staff and budget. It offers educational and training programs as well as elective health services research experience within a variety of operational interdisciplinary settings.

### **Division of Clinical Investigation**

The division's prime occupation is coordination of multi-clinic, cooperative, prospective clinical trials through the use of a multidisciplinary staff.

In addition to the teaching programs of the department, the division conducts a course in drug evaluation in the School of Pharmacy.

The division currently coordinates six cooperative clinical trials which are

long-term studies with an estimated duration of ten years. They are: (1) the University Group Diabetes Program; (2) the National Coronary Drug Project; (3) the Diabetic Retinopathy Study; (4) the Coronary Drug Project Aspirin Study; (5) the Aspirin Myocardial Infarction Study; and (6) the Persantin Aspirin Myocardial Infarction Study.

A research services consultation unit to serve the medical school has been developed within the division.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

Refer to Department of Psychiatry First Year for description of joint program.

### *Second Year*

**PREV 520. Quantitative Medicine (30).** First Semester. The course presents concepts and methods of evaluation and interpretation of evidence; prepares students for a subsequent course in descriptive and applied epidemiology; teaches the application of scientific method to clinical and population studies; presents the concept of biological variation and methods to describe and measure it; presents concepts of disease causation, and teaches fundamental principles of disease control. The course is presented by lectures, small group discussions, review of published papers and individual exercises.

**PREV 521. Clinical Epidemiology (32).** Second Semester. The epidemiology, natural history, risk factors, control and prevention of major selected diseases are taught by lectures and interdisciplinary seminars.

### *Fourth Year*

**PREV 540. Epidemiologic Basis for Clinical Practice.** The 48 hours will be divided into two independent sections of one month each: Health Assessment and Preventive Medicine in Clinical Practice. After one month the two groups of students will switch sections.

#### *A. Health Assessment:*

Health Screening in Clinical Medicine Seminars (one three-hour seminar per week for four weeks) will center on a rational approach to health assessment in symptomatic individuals using the incidence and prevalence of various diseases and the known epidemiologic risk factors associated with the major chronic diseases to develop a selective health evaluation for each individual. Each test will also be discussed in terms of its sensitivity and specificity as well as the disadvantages related to false positive and false negative results. The economic and psychologic costs of screening, diagnostic testing, and therapy will be discussed for the various components of the health assessment. Through this approach, the student will develop and understand the necessity for a selective approach to the health assessment of each individual dependent upon that individual's age, sex, race, socioeconomic status, and his individual risk factors.

Clinical Screening Experiences (two three-hour clinic sessions, screening two new patients per session; two three-hour clinic sessions for recommendations, referral, and follow-up, two patients per session). The student will gain skills in prescriptive screening through his experience in clinical situations. Recommendations will be based on referral to those components of the health care system best equipped to deal with the problem and risk factors identified in the assessments.

#### *B. Preventive Medicine in Clinical Practice:*

Two three-hour seminars per week for four weeks. The objectives of the course are: to correlate clinical medicine, epidemiologic knowledge of the natural history and association of disease, and understanding of the pathophysiology of disease; to demonstrate the application of epidemiologic knowledge to health maintenance and the treatment of disease within the practice of comprehensive ambulatory

care; to develop protocols for high quality comprehensive care of ambulatory patients with a broad spectrum of health and disease problems and to consider current issues in the delivery and evaluation of medical care. Each session is organized as a discussion of one or two topics led by a department faculty member, joined when appropriate by a clinician specializing in the area. Specific areas to which the objectives are related include Clinical Trials, Infectious Disease, Nutrition, Behavior Change, Pending Legislation on Health Insurance, Existing Health Insurance, the Community Hospital, and Care of the Aged.

**Clinical Preventive Medicine Rotations.** A variety of elective opportunities in clinical preventive medicine are available to senior medical students. Interested students should contact the Chairman of the Department or refer to the medical school electives manual. Courses may include research opportunities and clinical experience.

## ELECTIVES

The minimester elective program of the department has been developed to complement and round out the core material presented within the framework of the required curriculum. Two basic science programs are available; electives in these programs include the following subject areas:

*A. Health Care Organization and Behavioral Science.* Issues in Health Care Delivery; Advanced Health Care Courses, such as Public Health, Health Services Administration, and Health Economics; Principles of Behavior Modification; Parent-Child Interaction and Pediatrics; Human Ecology; Psychosocial Factors and Illness; Communication Skills.

*B. Biostatistics and Epidemiology.* Medical Biostatistics; Mathematical Models Computer Simulation; Probability and Its Application in the Biomedical Sciences; Methods for Analyzing Biomedical Data; Computer Generation and Analysis of Data; Control of Infectious Diseases; Clinical Trials; Selected Topics in Biostatistics; Environmental and Occupational Diseases; Cancer Control; Causes and Control of Pediatric Disorders; Epidemiology of Psychiatric Illness; Principles of Data Processing.

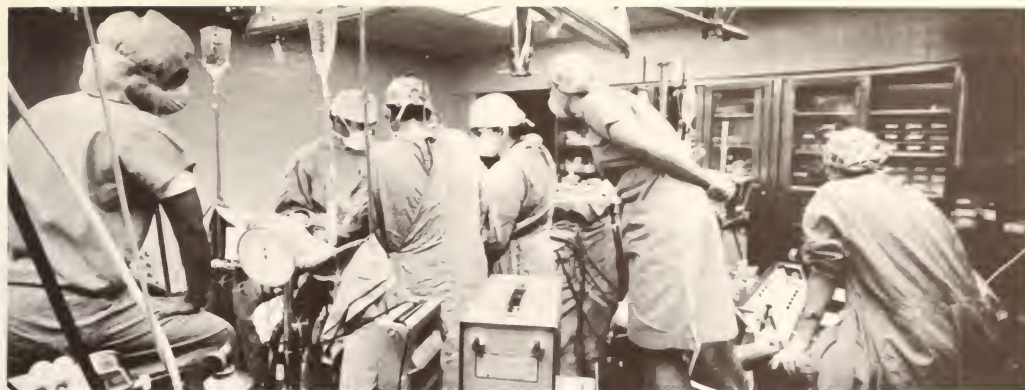
## FELLOWSHIPS

Summer fellowships in community medicine, preventive medicine and epidemiology are offered to freshman and sophomore students. Freshmen may choose to study the components of the medical care system including community institutions or agencies relating to specified topics of interest, activities of private physicians, or in special projects which are part of the department's activities. Individual elective clerkships in comprehensive and preventive medical care are arranged for senior medical students. Tutorials in the epidemiologic basis for diagnosis, management and prevention of disorders in specified clinical specialties are arranged in coordination with the chairman of the clinical department in which senior students elect clerkship.

## GRADUATE AND POSTGRADUATE MEDICAL PROGRAM

The Department of Social and Preventive Medicine offers residency positions in each of three years of training in addition to postdoctoral fellowships. The department emphasizes six major areas: epidemiology, clinical trials, program evaluation, medical sociology, medical care administration, health education and clinical preventive medicine. Each resident or fellow is given expert guidance in developing a program to provide him with an opportunity to develop professional expertise in preventive medicine. Graduate training is currently available in several aspects of Social and Preventive Medicine. Education in the sciences basic to preventive medicine can be combined with clinical experience in major specialties. An internship is not required.





## SURGERY

The Department of Surgery is composed of six divisions: general surgery, neurosurgery, orthopedics, otolaryngology, thoracic and cardiovascular, and urology. The faculty of the various divisions participate in the teaching of anatomy, pathology, biochemistry and introduction to clinical medicine, but do not offer formal courses until students enter their clinical clerkships. During this twelve-week period, time is divided between general surgery and the subspecialties of orthopedics, otolaryngology and urology. Students may have clerkships at the University of Maryland Hospital or at one or more affiliated hospitals (Mercy, Maryland General and Baltimore City).

Electives in surgical research and summer fellowships are available to students in all four years. More extensive clinical experience with greater patient responsibility is offered by all divisions to students as electives in their fourth year.

The surgical clerkships give the student exposure to those disease entities which can or should be treated by operative intervention and to those physiologic and metabolic alterations which arise from such intervention. Students are expected to gain experience in recognition of conditions which will require surgical consultation and gain appreciation of wound care as well as familiarity with basic emergency procedures. This should enable the future internist, pediatrician or psychiatrist to discuss with his patient the probable treatment and prognosis of various surgical diseases, as well as giving students the opportunity to explore various surgical disciplines and to participate fully in the daily activities of surgical teams.

Graduates of approved medical schools will be considered for residencies in general surgery, neurological surgery, orthopedics, otolaryngology, thoracic and cardiovascular, and urologic surgery.

## Division of General Surgery

### UNDERGRADUATE MEDICAL PROGRAM

#### *Third Year*

**GSUR 530.** The teaching of general surgery is conducted in the inpatient environment of the University of Maryland, Baltimore City, Maryland General and Mercy hospitals. Students are divided into groups of two or three for continuous assignment to individual patient areas. Upon admission to the service, selected patients are assigned to individual students who are expected to record a complete history, the results of a physical examination and required laboratory studies. A differential diagnosis, final diagnosis and recommendations for therapy must be included. Operation room participation is encouraged but not required.

The program is designed to give the student a broad overview of the fundamentals of the discipline of surgery in a clinical environment and includes contact with a wide variety of adult and pediatric patients. This includes patients with infections, neoplasms, trauma, endocrine disorders, vascular disease, gastrointestinal problems, metabolic disorders and congenital defects often requiring extensive medical evaluation followed usually by surgical therapy.

The student is responsible for core reading material which is identical regardless of his hospital assignment. Emphasis throughout the course is placed on problem solving through correlation of basic science information with clinical diagnosis and management.

#### *Fourth Year*

**GSUR 541. Elective Clerkships.** This elective allows the student to participate as an integral member of a surgical care team. Students are assigned to various services at University of Maryland and affiliated hospitals by choice for a minimum of four weeks. Additional multiples of four weeks may be elected.

**Additional Elective Opportunities.** Students may elect service at the University of Maryland Hospital in Oncology, Gastrointestinal Surgery, Vascular Surgery, or Pediatric Surgery.

Surgical ward clerkships are available at the following affiliated hospitals: Maryland General, Mercy, Baltimore City, and York (Pa.).

A clinical clerkship is offered at the U.S. Public Health Hospital.

At Baltimore City Hospitals or York (Pa.) Hospital, electives are offered in the Surgical Emergency Room and Plastic and Reconstructive Surgery.

Consult the medical school electives catalog for course details.

## **GRADUATE AND POSTGRADUATE PROGRAMS**

Fully-accredited residencies are offered at the University of Maryland Hospital and its affiliated hospitals, Maryland General and Mercy. Additionally, research fellowships are available; and, for the practicing physician, short refresher courses are given.

## **Division of Neurological Surgery**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *First and Second Year*

**Clinical Correlation in the Basic Sciences.** In the first year curriculum, the staff participates by giving correlative lectures and demonstrations. The attending and resident staffs participate in the teaching of physical diagnosis of the nervous system in the second year.

#### *Fourth Year*

**Electives.** Electives in Clinical Neurosurgery and a Pediatric Neurosurgery preceptorship are offered. Consult the electives catalog for details.

### **GRADUATE STUDIES**

A training program in neurological surgery is offered to graduates of accredited medical schools who have completed one year of surgical residency. The five-year program is accredited by the American Board of Neurological Surgery.

## **Division of Orthopedic Surgery**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Third Year*

**OSUR 530. Orthopedic Surgery, University of Maryland Hospital.** The course is specifically designed to teach the recognition and treatment of patients with acute fractures, including the severe multiple-injured patient, metabolic bone diseases, bone tumors, developmental and acquired deformities of the musculoskeletal system. The service is devoted largely to the care of adult patients with some access to children's orthopedic disease and pediatric trauma. Additional experience in this area can be obtained as a senior elective.

**Orthopedic Surgery, Baltimore City Hospitals.** Clinically-oriented courses in the principles and techniques of orthopedic surgery are offered to a limited number of applicants. Additional experience can be taken as a senior elective.

#### *Fourth Year*

**Electives.** Courses are offered at: University of Maryland Hospital, James Lawrence Kernan Hospital for Crippled Children, St. Agnes Hospital, York (Pa.) Hospital, Baltimore City Hospitals, and Montebello State Hospital.

### **GRADUATE STUDIES**

The Division of Orthopedic Surgery offers an accredited four-year residency program. A balanced program is achieved through cooperation with St. Agnes, a community hospital, Montebello State, a rehabilitation hospital, and James Lawrence Kernan Hospital for Crippled Children.

Elective rotations at other orthopedic centers, both in the United States and abroad, are available in the fourth year of residency provided they are approved by the American Board of Orthopedic Surgery.

### **Division of Otolaryngology**

The division provides an introduction to the diseases of the head and neck. A wealth of opportunity is provided to the student who will be concerned with communication disability and the clinical diseases where hearing, speech and language are of diagnostic significance.

The entire staff with the assistance of the postdoctoral trainees provide each student by example, lecture and direct tutorial instruction, the essentials with which to enter residency in such fields as family practice, pediatrics, general surgery, neurosurgery, neurology, psychiatry and otolaryngology.

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *First and Second Years*

Introduction to the diseases of the head and neck is begun through interdepartmental arrangement with anatomy and physiology in the first year. Introduction to Clinical Practice provides freshman students in second semester with six hours of experience in the techniques of examination of the ears, nose and throat. During the second year, six hours of experience throughout the year allows more advanced examination of the head and neck.

#### *Third Year*

Third year students are introduced to the care of patients with diseases of the ears, nose and throat. One hour of basic audiological technique is presented to each group by an audiologist and one hour of introductory speech pathology is presented by a speech pathologist.

Fundamental elements of otolaryngologic diagnosis and therapy are stressed in this program of approximately ten days.

#### *Fourth Year*

**Electives.** Electives are offered in the following areas: basic clinical otolaryngology, advanced otolaryngology, communication disorders, investigation in otolaryngol-



ogy, physiology of hearing and surgical otolaryngology. For detailed course descriptions, consult the medical school electives catalog.

### GRADUATE STUDIES

Resident training in otolaryngology is open to four residents in each of the four years of the American Board of Otolaryngology-approved program.

## Division of Thoracic and Cardiovascular Surgery

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**TSUR 541. Externship in Thoracic Surgery Elective.** Its main purpose is to present the basic pathophysiological principles of thoracic and cardiovascular surgery, a highly specialized and demanding discipline, in a clinical setting. The student becomes a member of one of the teams on the service and serves in the capacity of an intern. Duration of the course is four weeks with a maximum of 12 weeks available.

### GRADUATE STUDIES

The two-year residency program which admits two trainees each year is approved by the American Board of Thoracic Surgery. Applicants must be eligible for the American Board of Surgery examination at the start of the program. Residents are given an opportunity to assist and then perform all types of cardiothoracic operative procedures, including cardiopulmonary bypass, in a program designed to ensure progressive experience.

## Division of Urology

The urologic curriculum is designed to introduce urologic principles as they relate to preservation of renal function, cause and cure of urinary tract infection, maintenance of a normal or acceptable voiding pattern and disorders of the male reproductive system.

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

Lectures and demonstrations on disorders of urine transport are given in conjunction with the Division of Nephrology and the Department of Pathology during two weeks of instruction on the renal system.

#### *Third Year*

**USUR 530. Junior Clerkship.** Five to seven students are assigned to the division for ten days at the University of Maryland Hospital. Each is asked to review and follow a patient with a different urologic problem and to present this patient to the group and a faculty member. Daily rounds and conferences are held. The students observe and participate in diagnostic and operative procedures and attend the outpatient clinic every afternoon. A morning is spent reviewing study questions near the end of the ten days. Nephrologists meet with the group two mornings per week.

#### *Fourth Year*

**Electives.** Students may elect an externship in Urology at University of Maryland, Maryland General and York (Pa.) hospitals or at Baltimore City Hospitals.

### GRADUATE STUDIES

The residency program consists of three years of training following a year as an assistant resident in surgery. Each year three are appointed and become co-residents at the end of the third year if progress in training has been satisfactory.



# **MEDICAL TECHNOLOGY PROGRAM**

The University of Maryland offers a baccalaureate degree program in Medical Technology to be completed in four academic years. Students who have been accepted into the Medical Technology Program study during the senior year at the School of Medicine and University of Maryland Hospital in Baltimore. The program fulfills requirements set forth by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and the Council on Medical Education of the American Medical Association (AMA). Upon successful completion of the program, graduates are eligible to take the medical technology national certification examination given by the Board of Registry of the American Society for Clinical Pathology (ASCP).

## APPLICATION AND ADMISSION

Applicants must meet all admission requirements of the University of Maryland. At least three years of college preparatory mathematics and science, including chemistry and physics, are strongly recommended. Applicants must have a 2.5 grade point average (2.0 in science) and must take the Allied Health Professions Admission Test.

Applications to the professional school will not be considered until the first semester of the junior year. At that time, the applicant submits an undergraduate Professional Application for Admission. Requests for application should be submitted to: The Office of Admissions and Registration, University of Maryland, Room 132, Howard Hall, 660 W. Redwood Street, Baltimore, Md. 21201.

Advancement to the professional segment is determined by criteria set by the Committee on Admissions.





## PREPROFESSIONAL CURRICULUM

Students must complete at least 90 semester hours of academic preparation, exclusive of health and physical education, before beginning the professional segment of the Medical Technology Program. The following curriculum guide, which fulfills University of Maryland and National Accrediting Agency for Clinical Laboratory Science requirements, will assist the student in planning the first three years of study.

### General Education Requirements

- A. Life sciences, agriculture, mathematics, science.  
Satisfied by Medical Technology Program requirements.
- B. Behavior and social sciences (six semester hours).  
Select any six hours from listed divisional courses.
- C. Arts and humanities (12 semester hours).  
English (6) - one course must be Composition (Medical Technology Program requirement).  
Speech (3) - Medical Technology Program Requirement.  
Select an additional three hours from listed divisional courses.  
NOTE: Credit for foreign language will be given only upon completion of advanced course.

### Program in Medical Technology Requirements

- A. Mathematics (six semester hours).  
Introductory College Math (3,3): logic, sets counting, probability, sequences, elementary algebraic and transcendental functions and their geometric representations; linear equations, vectors, matrices; or equivalent;  
OR  
Introductory Analysis (3): real numbers, functions, coordinate systems; trigonometric functions and plane analytic geometry.  
  
Recommended: College level Statistics
- B. Chemistry (16 semester hours).  
Inorganic chemistry with lab required (4).  
Organic chemistry with lab required (4).  
Select an additional eight hours from listed divisional courses.  
Recommended: Biochemistry, Physical and Analytical Chemistry, Quantative Analysis
- C. Biology (16 semester hours).  
General zoology with lab required (4).  
General microbiology with lab required (4).  
Select an additional eight hours from the following: Anatomy and Physiology, Genetics, Comparative Vertebrate Morphology, Cellular Biology, Pathogenic Microbiology.  
Recommended Electives: Parasitology, Histology, Physics, Statistics, Immunology.

## PROFESSIONAL CURRICULUM

Students are accepted into the Medical Technology Program on a competitive basis. Successful completion of 90 semester hours does not guarantee admission to the professional segment of the program.

The professional segment, of 12 months duration, is administered by the University of Maryland School of Medicine at the Baltimore Campus. Two classes are admitted each year (January and July). Full-time attendance is required during the senior year. The first six months of this year consist of lectures, didactic laboratories and simulated clinical laboratory instruction. The second half of the year involves rotation in each discipline of the clinical laboratories at the University of Maryland Hospital. Members of the Department of Pathology faculty present several lectures in all disciplines of medical technology during the year.

## UNDERGRADUATE MEDICAL PROGRAM

### *Senior Year*

**MEDT 351. Clinical Chemistry Lecture (3).** This course provides future medical technologists with the necessary background material and information to function effectively in the current atmosphere of the clinical chemistry laboratory. The series of academic lectures is designed to teach the biochemical basis for the chemical determinations required by physicians in the diagnosis of disease. To facilitate this course, material is organized in terms of organ function studies. Normal physiology underlying a laboratory test is presented and the alterations of normal physiology as they occur in each disease are discussed. In discussion of each condition those tests most helpful in diagnosis are repeatedly emphasized.

In addition to the fundamentals for clinical chemistry, a series of lectures in Radiological Safety and the handling of radioactive isotopes is included. The primary requirement for this latter consideration is the rapid development of the field of chemistry which utilizes radioactive materials for the measurement of biological species through the techniques of radioimmunoassay. The course in part incorporates and replaces MEDT 350 and MEDT 355.

**MEDT 352. Clinical Chemistry Laboratory (4).** The course consists of a series of lectures and laboratories designed to provide an intensive study of the qualitative and quantitative principles and procedures utilized in the chemistry laboratory. The significance of chemical reactions in these diagnostic procedures and their relationship to the disease processes of man are studied. Emphasis is also placed on the interpretation, accuracy, precision and limitations of these tests in evaluation of organ functions. The significance of statistics, population testing, and quality control in the laboratory is also covered. Included in this course, and in part replacing MEDT 375, is a study of renal physiology and correlation of laboratory findings of clinical microscopy with pathological processes.

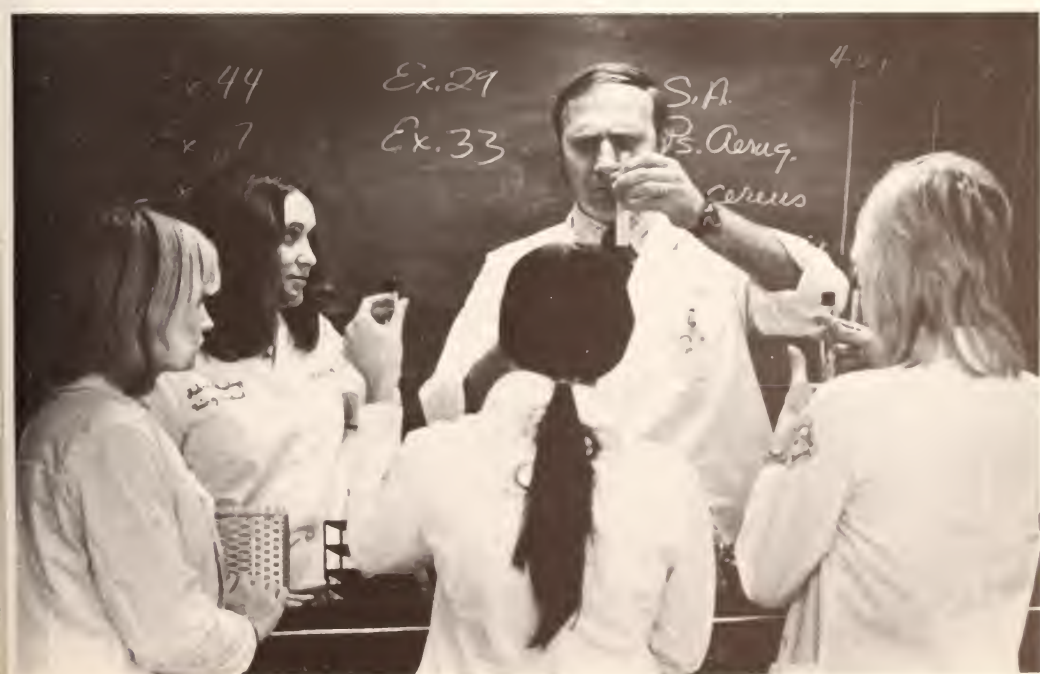
In conjunction with this type of instructional material, occasional workshops for more intensive training in specialized areas are utilized. This enables the student to accomplish more detailed techniques under close supervision of an instructor. This course in part replaces MEDT 350, MEDT 375, and MEDT 355.

**MEDT 353. Clinical Practice (5).** This period of instruction is included to enable the student to apply and perfect the various chemistry procedures he was introduced to in the pilot laboratory (MEDT 350). The instruction is conducted in a clinical environment under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge in laboratory procedures. This course replaces previous course MEDT 390.

**MEDT 361. Hematology Lecture (2).** An introduction to the mechanisms of hematopoiesis and pathogenesis of hematologic disorders. This course also involves the study of the mechanism of coagulation and its practical application in pathological processes. The course is designed for medical technology students and returning technologists. Lecture and discussion topics include the following: the origin, development and function of blood cells, methods of studying blood, anemia classifications and descriptions of mechanisms involved, other disorders associated with the anemias, polycythemia, leukemia and leukemoid reactions, plasma cell and plasma protein abnormalities, lupus erythematosus, theory and mechanisms of hemostasis, defects of coagulation factors, hereditary telangiectasia, Von Willebrand's disease, thrombocytopathy, thrombasthenia, function and treatment of hemorrhagic diseases and laboratory diagnosis of disorders of hemostasis. Formerly listed as Hematology MEDT 360 and 361. Prerequisite: permission of instructor and department.

**MEDT 362. Hematology Laboratory (2).** Emphasis is placed on laboratory studies of techniques used in clinical hematology laboratories. Laboratory rules and quality control are included along with standardized tests and equipment. Testing is performed in a simulated clinical laboratory setting on samples taken from normal and abnormal individuals within a hospital population. Correlation of clinical disease with abnormal laboratory findings is presented by case studies and group discussions. The major part of this course is taught through the processing of samples after formal demonstrations, lectures and discussions. Prerequisite: MEDT 360 or consent of instructor.

**MEDT 363. Hematology Rotation (5).** Rotation through the clinical hematology laboratory with instruction and oral examinations in the areas of routine hematology, special hematology and coagulation studies. Applied professional experience includes the use of the most modern methods and instrumentation in the analysis of hematological and coagulation samples. Proficiency in manual and automated methods must be obtained in all areas. Prerequisites: MEDT 361 and 362 or permission of the department.





**MEDT 365. Immunohematology Lecture (1).** This basic course in immunohematology is designed for student medical technologists. The course stresses historical, practical and theoretical aspects of blood group serology. Emphasis is placed on the clinical manifestations of the blood group systems, their antigens and antibodies. Lectures and discussions include the following topics: history of blood transfusions, inheritance of blood groups, the ABO group system, the Ph blood group system, transfusion and compatibility testing, types and structures of blood group antibodies, the M, N, S and P blood group systems, other blood group systems, blood groups and transfusions, hemolytic diseases of the newborn, blood storage and immunology of tissue antigens. Prerequisite: admission to the program or departmental permission.

**MEDT 366. Immunohematology Laboratory (1).** A simulated clinical immunohematology course designed to expose students to the general conditions of the modern blood bank service. Applied experiences are encountered in the following areas: equipment and basic procedures employed in blood banking, quality control in blood banking, problems relating to the common blood antigen systems and their associated antibodies, donor processing and blood administration, prenatal and postnatal studies, medicolegal use of blood types, transfusion reactions, atypical antibody identification, HAA screening and blood component therapy. Prerequisite: MEDT 365.

**MEDT 367. Immunohematology Rotation (5).** This course consists of applied professional experience in a clinical blood bank laboratory. Instruction and oral examinations are given at the bench in routine and specialized areas of the modern blood bank service. Students enrolled in this course are expected to demonstrate a high level of proficiency in all areas of blood bank services prior to completing the course. Prerequisite: MEDT 366 and 367 or departmental permission.

**MEDT 371. Clinical Microbiology Lecture (4).** The objective of this course is to acquaint the student with the role of microorganisms in the disease of man. Emphasis is upon the differentiation and culture, clinical manifestations, infectious processes and epidemiological aspects of the bacteria. Included is an introductory study of the classification, morphology, and identification of the pathogenic fungi, as well as systematic review of the morphology, life cycle, disease process and identification of human parasites. Some consideration is allotted to the characteristics and properties of viruses and rickettsiae and the concepts governing the pathogenicity, immunity, epidemiology and identification. Instruction in immunology touches upon the study of the theories of antibody production and principles of immunological reactions to infectious and non-infectious agents. This course in part replaces previous course MEDT 370.

**MEDT 372. Clinical Microbiology Laboratory (3).** The scope of this course emphasizes the techniques employed in the clinical laboratory to isolate and identify those microorganisms incriminated in human pathogenesis. Criteria for the differentiation of these pathogens encompasses morphological, cultural and biochemical characteristics as well as serological assays. Of foremost interest are the bacteria, fungi and parasites with lesser concern apportioned to the viruses and immunological procedure. Simulated laboratory practices are enacted which complement the didactic instruction received in MEDT 371. This course, in conjunction with course MEDT 371, replaces previous course MEDT 370.

**MEDT 373. Clinical Practice (5).** This period of instruction is included to enable the student to apply and perfect the various microbiological techniques he was introduced to in the pilot laboratory. This instruction is conducted in a clinical environment under the auspices of proficient laboratory technologist and provides an opportunity for the student to attain practical knowledge in laboratory procedures. This course replaces previous course MEDT 390.



**MEDT 381. Electronics and Instrumentation Lecture (1).** The course is designed to acquaint the medical technology student with basic principles of electronics and to introduce instrumentation widely used in the clinical laboratories. The first portion of a series of 15 lectures deals with basic electronic principles that aid the student in constructing a better understanding of instrumentation. The remaining lectures discuss theory and elementary principles of operation of a wide range of instrumentation used in clinical laboratories, including: spectrophotometry-visible, ultra-violet and infra-red, flame analysis, fluorometry, nephelometry, electroanalytical chemistry, colligative measurements and chromatography. This course in part replaces MEDT 380.

**MEDT 382. Electronics and Instrumentation Laboratory (2).** This course provides medical technology students with a practical and workable knowledge of electronics in order to better understand, operate, trouble-shoot, and maintain the instruments currently used in clinical laboratories. The series of fifteen lectures and fifteen laboratories is designed to teach principles of electronics and the application of these principles to instrumentation. Supplementing the instructional theory of MEDT 381, each student has the opportunity to operate and trouble-shoot a wide variety of instruments including spectrophotometers, visible and ultra-violet, flame photometers, fluorometers, osmometers, and thin layer and gas chromatographic systems. Theory of instrument design and operation is emphasized. This course in part replaces MEDT 380.

**MEDT 386. Clinical Pathology (2).** The study of normal and pathological tissue is presented along with the histological and chemical methods for tissue identification. Special staining techniques and selected histological cases are studied. Lectures are presented with laboratory work and case study.

**MEDT 395. Medical Technology Seminar (1).** The role of today's medical technologist is discussed in relation to the changing medical world. Problems in laboratory management, administration and research techniques are presented. At the end of this course each student must submit a scientific research paper on a subject of his choice related to clinical pathology.

## FACULTY

### *Program Director*

Masters, Jason M., Associate Professor; BS, High Point College; MS, Sul Ross State; PhD, University of Maryland.

### *Education Coordinator*

Hill, Elizabeth S., BS, MT (ASCP), Instructor, University of Maryland; BS, Temple University.

### *Associate Professor*

Jiji, Rouben, MD, Royal College of Medicine, Baghdad, Iraq.

Knoblock, Edward C., AB, Western State College of Colorado; MS, University of Maryland.

Libonati, Joseph P., BS, St. Joseph's College; MS, Duquesne University; PhD, University of Maryland.

### *Assistant Professor*

Cartwright, Willie Q., BS, MT (ASCP), Howard University; MS, State University of New York at Buffalo.

Wilde, Kenneth D., BS, Kutztown State College; MS, University of Maryland; PhD candidate, University of Maryland.

### *Instructor*

Baker, David, C., BS, Kansas State University; MS, University of Missouri.

Billings, David, A. Jr., BS, MT (ASCP), University of Maryland.

Burris, James A., BS, MT (ASCP), University of Maryland.

Goldman, Glenda, BS, MT (ASCP), University of Maryland; MS, University of Maryland.

Gonzalez, Karen H., BS, MT (ASCP), University of Maryland; MS, University of Maryland.

Harmening, Denise M., BS, MT (ASCP), University of Maryland.

Krause, George W., BS, University of Maryland.

### *Clinical Faculty*

Tigertt, William D., Professor and Medical Director; AB, Baylor University; MD, Baylor University.

Rasmussen, Peter, Professor and Laboratory Director; MD, Temple University.

Anthony, Ronald L., PhD; Assistant Professor and Director of Clinical Immunology.

Dawson, R. Ben, MD; Assistant Professor and Director of Blood Bank.

Smith, Andrew G., PhD; Associate Professor and Director of Microbiology.

Valigorsky, Jon M., MD; Assistant Professor and Director of Clinical Hematology.

### *Clinical Teaching Staff*

Boyle, Emily

Brooks, Margaret

Davis, Rocio Q., BA, MT (ASCP)

Dougherty, Elizabeth L., BS, MT (ASCP)

Dourakos, Constance, BS, MT (ASCP)

Maloney, Bertha H., BS, MT (ASCP)

Mandula, Eva, MT (ASCP)

Peddicord, Charles, PhD

Redor, Ofelia, BS

Rundell, Clark, PhD

Schwartz, Lenore A., BA

Thomas, Gloria M., MT (ASCP), M (ASCP)

Uycoco, Gloria, BS, H (ASCP)

Wright, Patricia, MT (ASCP) S BB





## **PHYSICAL THERAPY PROGRAM**

The Physical Therapy Department, under the direction of the University of Maryland School of Medicine, seeks to provide educational enrichment, professional training and personal development with emphasis in three areas:

- Specific skills as a physical therapist to develop competency in providing services related to patient evaluation, program planning and implementation of treatment as well as developing adjunct skills as an administrator, consultant and teacher.
- Cultivate professional characteristics in regard to human relations, communication skills and sensitivity toward the needs of others.
- Increase the capacity for analytic and critical thinking in the pursuit of scientific inquiry.

Believing that a broad base of education is essential for continued growth, the professional curriculum offers an extensive foundation in human anatomy and physiology by emphasizing the neuromuscular, musculoskeletal, cardiovascular and respiratory systems. A view of pathological processes involving these systems is also presented.

With this as background, the student is taught principles related to therapeutic application of heat, cold, light, electricity, water, sound, therapeutic exercise and functional training. Additional courses are aimed at promoting a high standard of professional ethics, increasing problem-solving skills and improving professional communication. Elective and honor courses are available for those students who have the ability and desire to develop research capability.

Eighteen weeks of clinical experience allow the student to utilize what has been learned and to implement therapeutic and interpersonal skills in the treatment of patients.

## ACCREDITATION

Since 1956, the University of Maryland has offered a four-year program in physical therapy leading to a Bachelor of Science degree. The University of Maryland is accredited by the Middle States Association of Colleges and Secondary Schools and the physical therapy curriculum is approved by the Council on Medical Education of the American Medical Association in collaboration with the American Physical Therapy Association. A graduate is eligible to become a member of the American Physical Therapy Association and to apply for professional licensure in Maryland and in other states.

## CLINICAL AFFILIATIONS

Clinical education is an essential part of the total physical therapy program offered at the University of Maryland. There are 52 centers currently being used for experiences in acute/general, chronic/rehabilitation, pediatric, and community health settings. Twenty-seven centers are located in Maryland, ten in the District of Columbia, two in Virginia, two in Pennsylvania, six in New Jersey, three in New York, one in North Carolina, and one in Michigan.

## PREPROFESSIONAL AND PROFESSIONAL YEARS

**Freshman and sophomore curricula.** Preprofessional training consists of liberal arts courses. Students may take this portion of their training within the University of Maryland system or at any other accredited college or university.

**Junior and senior curricula.** Professional training is offered only at the Baltimore City campus of the University of Maryland (UMAB). A student must make separate application and submit to an admission process for the professional portion. Admission to the University of Maryland system as a freshman or sophomore does not guarantee admission to the professional program, since enrollment is limited to 52 competitive positions.

## PROFESSIONAL DIVISION ADMISSION PROCEDURE

An admission committee is charged with selecting students annually for the fall semester. In cases where a student has already taken some professional courses, consideration for exemption is made after he/she has been admitted.

Minimum qualification at the junior level is the completion of 60 designated credits with a grade of "C" or better in each of these preprofessional courses. The minimum grade point average for admission is 2.0 on a 4.0 scale. However, it is only realistic to assume that a higher average is needed for selection. It is unlikely that non-resident candidates with less than a 3.0 average will be considered. There is no exclusion based on sex, age, ethnic background or prior completion of another academic degree. The department makes an effort to identify and assist qualified black students.

The following courses and credits are required for admission consideration:

Mathematics (Two college level courses including algebra and trigonometry OR one course of analytic geometry or calculus plus a three-credit elective) .....	6
Chemistry (General college chemistry with lab) .....	8
Physics (General college physics with lab) .....	8
Zoology or Biology (General Zoology I or Biology I for science majors with lab plus a second course with lab; e.g., General Zoology/Biology II, Genetics, or Human Anatomy & Physiology — Botany is not acceptable) .....	8
Social Science (Afro-American studies, anthropology, economics, government & politics, urban studies, sociology, geography) .....	3
Psychology (One introduction or general course and one of developmental or personality study — Abnormal Psychology is recommended) .....	6
English Composition (Students with advanced credit or exemption may substitute a three-credit elective) .....	3
Speech, Public Speaking (Students with one year of speech in high school may substitute a three-credit elective upon furnishing a transcript) .....	3
Arts and Humanities (History, literature, foreign language, philosophy, appreciation of: art, music, drama, dance) .....	6
Electives (Selection may be made in areas of individual interest. No more than two credits of non-theory or skills may be applied. Review or introductory courses may not be used if they are below the required level in biology, chemistry, physics, and math) .....	9

Academic advisement is available to students enrolled on the UMCP and UMBC campuses. Other interested students should contact the Admissions Committee located on the Baltimore City campus or, in the case of students at one of Maryland's Public Community Colleges, seek information about required courses at his/her school's counseling center.

Academic credit completed by examination or courses taken at another accredited institution will be considered for transfer to the University of Maryland. Scores of Advanced Placement Examination or College Level Examination Placement should be recorded on transcripts, or an official copy of test scores should be furnished.

For evaluation of previous college courses, transcripts and copies of catalog course descriptions should also be sent to the attention of the Admissions Committee at the following address: University of Maryland, Department of Physical Therapy, Allied Health Professions Building, 32 South Greene Street, Baltimore, Maryland, 21201. Please note that these transcripts are in addition to the official ones required by the Office of Admissions and Registrations.





## APPLICATION

To obtain an application, address your request to: University of Maryland, Office of Admissions & Registrations, 660 W. Redwood Street, Baltimore, Maryland 21201.

A student who can realistically meet the academic requirements and who wishes to be considered a candidate for the junior class should submit a request for an application after *October 1* preceding the year of admission. Application request deadline is *February 1*, and supporting documents must be received by *March 1* of the year of admission.

A test is required as part of the admission procedure and details on this are included with the application. Personal interviews with those candidates considered most qualified are conducted during the spring semester.

## TUITION AND FEES

	Fall Semester	Spring Semester
Matriculation fee (new students)	\$ 15.00	\$ -
Tuition - In-State	275.00	275.00
Tuition - Out-of-State	855.00	855.00
Instructional Resources fee	15.00	15.00
Supporting Facilities fee	30.00	30.00
Student Activities fee	7.50	7.50
Student Health fee	5.00	5.00
Hospital Insurance Blue Cross (required if not covered by another source)		
Individual	42.30	42.30
Two Persons	89.88	89.88
Family	119.04	119.04
Dormitory fee	307.50	307.50
Graduation fee	-	15.00
Junior Summer Clinical Education (tuition and fees).....		\$130.00
Approximate cost of books, uniforms and professional fees per year .....		\$200.00
Costs as listed are subject to change.		

The student should plan his/her finances according to the full schedule which permits only one six-week free period for either full-time employment or vacation. This period will be during the first or second half of the summer between the junior and senior years.

**PROFESSIONAL CURRICULUM***Junior Year, First Semester*

**BTPT 320. Physical Therapy Theory and Practice I.** (1-32). Palpation and manipulation of soft tissue for the purpose of evaluating anatomical structures responsible for restriction of normal range of motion or inhibition of functional activity. The student will be expected to acquire a knowledge of basic physiological effects of massage; demonstrate an understanding of anatomical structure; and acquire a limited proficiency in the application of massage techniques and the principles of peripheral joint manipulation. Eight lecture hours, 24 laboratory hours.

**BTPT 330. Clinical Education and Professional Relations I.** (1-32). Introduction to the concepts of professionalism, health professionals, the concepts of ethical behavior, the purpose of professional organizations (especially the American Physical Therapy Association), and mechanisms of professional regulation; e.g., accreditation, certification, and licensure. Eight lecture hours.

**MANA 303. Human Anatomy.** (8-176). Prerequisite: Biology and/or Zoology — eight hours. A study of the human body morphology developed through lecture and laboratory presentations with emphasis placed on the musculoskeletal and neuromuscular systems. Cadaver dissection is coordinated with lecture. Consideration is given to clinical entities and radiography related to human anatomy. Eighty lecture hours, 96 laboratory hours.

**MPHY 302. Human Physiology I.** (1-16). Prerequisite: Biology and/or Zoology — eight hours. To be taken concurrently with MANA 303. Survey of human physiology related to body systems. Major emphasis placed on cell physiology, nervous system, muscular system, and physiology of bones. Fifteen lecture hours, three laboratory hours.

**MPHY 303. Human Physiology II.** (2-64) with laboratory. A continuation of Human Physiology MPHY 302, relating to the four major systems with consideration given to skin physiology. Laboratory exercises are coordinated with lectures and emphasize the cardiovascular and pulmonary systems. Sixteen lecture hours, 48 laboratory hours.

*Junior Year, Winter Session*

**BTPT 304. Nursing Procedures.** (1-20). Specific patient care procedures related to physical therapy, inhalation therapy, and/or nursing are studied. Includes isolation procedures, sterile technique, emergency situations that may occur in clinical settings, catheterization, respirators, specialized beds, injections, tracheotomy and suctioning, improvised equipment, nutrition, bandaging, and vital signs. Twelve lecture hours, eight laboratory hours.

**BTPT 321 Physical Therapy Theory and Practice II.** (3-80). Prerequisite: Physics — eight hours. Lectures and practice in the administration of thermotherapy, cryotherapy, hydrotherapy, and actinotherapy including rationale, therapeutic procedures, and transference by conduction, convection, radiation, and conversion. The physics and physiological effects are reviewed to enhance the students' ability to make judgments in therapeutic application. Considerations for utilizing supportive personnel and responsibilities relating thereto are included. Thirty-two lecture hours, 48 laboratory or clinical practice hours.

*Junior Year, Second Semester*

**BTPT 307. Evaluation Procedures.** (4-96). Principles and techniques of performing, recording and analyzing various tests and measurements are presented. Methods of assessing flexibility, girth, length, muscle strength, perceptual-motor deficits, physical fitness, posture, reflexes, sensation and sweating are included. In addition, a regional and systems approach for the application of tests and measurements is covered. The student will demonstrate proficiency in specific tests and measurements. Thirty-two lecture hours, 64 laboratory hours.

**BTPT 331. Clinical Education and Professional Relations II.** (1-36). Continuation of BTPT 330, Clinical Education and Professional Relations I, with lectures one hour a week for the first eight weeks. Approximately 28 clinical hours during the last eight weeks of the second semester. Additional time may be arranged with consent of the Director of Clinical Education.

**BTPT 340. Rehabilitation.** (3-64). Introduction to basic philosophy underlying comprehensive care of the severely handicapped, principles, practices, and the role of the physical therapist in a multidisciplinary approach. Includes an introduction to functional training, ambulation, application of assistive and supportive devices, and orthotics and prosthetics (emphasizing pre- and postprosthetic evaluation and treatment). Thirty-two lecture hours, 32 laboratory hours.

**BTPT 342. Therapeutic Exercise I.** (3-64). Application of the theory of exercise and study of developmental principles for the prevention, recognition, and treatment of physical disabilities. Proprioceptive Neuromuscular Facilitation techniques included. Thirty-two lecture hours, 32 laboratory hours.

**MANA 351. Biomechanics and Kinesiology.** (3-64). Prerequisite: Physics — eight hours. A detailed study of human motion with emphasis on mechanical and functional aspects. Designed to include biomechanical measurement and calculation, functional anatomy, and body mechanics under both normal and pathological conditions. Thirty-two lecture hours, 32 laboratory hours.

**MEDC 303. Clinical Medicine I.** (3-48). Prerequisite: Psychology — six hours. Lectures are given in pediatrics, medicine, geriatrics, psychiatry, and psychology of the handicapped. Emphasis placed on the aging process. Medical lectures include clinical aspects of the following disease entities: collagen, metabolic, renal, gastrointestinal, cardiovascular, infectious, and metastatic. Forty-eight lecture hours.

*Junior Year, Summer*

**BTPT 332. Clinical Education III.** (4-210). Full-time clinical experience for six weeks in a clinic during the summer between the junior and senior years. Provides the opportunity to develop proficiency in therapeutic and evaluative procedures learned in the first year. Hours per week are determined by the clinic. This may vary between 35 to 40 hours per week.

*Senior Year, First Semester*

**PATH 352. Pathology.** (2-32). Prerequisites: MANA 303, MPHY 302. Includes the study of the basic principles of disease and injury with their application to the various systems of the body. Autopsy and pathological specimens are observed. Thirty-two lecture hours.

**MEDC 353. Clinical Medicine II.** (3-48). Medical lectures in the specialties of radiology, pharmacology, obstetrics/gynecology, dermatology, pulmonary medicine, orthopedics, and surgery. Emphasis placed on specific aspects of each medical field as related to physical therapy. Forty-eight lecture hours.

**BTPT 350. Neurosciences.** (3-64). Correlation of neuroanatomy, neurophysiology, and clinical neurology, and lesions and their symptoms. The structure and function of the central nervous system will be presented simultaneously, and followed by clinical entities. Students engage in dissections of the human brain, examination of microscopic sections of the brain stem and spinal cord, and laboratory experience involving the study of functional aspects of the nervous system. Thirty-two lecture hours, 32 laboratory hours.

**BTPT 355. Physical Therapy Theory and Practice III.** (3-71). *Part I, Electrotherapy and Electrodiagnosis* (48): Includes the physics and the physiological effects of low fre-



quency alternating and direct currents as applied percutaneously for therapeutic and diagnostic use. Application of these procedures are compared with other therapeutic and diagnostic procedures. Sixteen lecture hours, 32 laboratory hours. *Part II, Electromyography and Nerve Conduction Velocity (23)*: Includes monitoring electrical potentials and nerve conduction velocity by means of electromyography. Seven lecture hours, 16 laboratory hours.

**BTPT 370. Biostatistics and Research.** (2-50). Prerequisite: Mathematics — six hours. Designed to prepare students for interpreting and evaluating research designs and statistical findings of biomedical research reports. Selected descriptive and inferential statistical procedures and tests are presented with accompanying problems worked in the laboratory. Twenty-four lecture hours, 26 laboratory hours.

**BTPT 371. Honors Biostatistics and Research.** (3-64). In addition to the material covered in BTPT 370, the power and efficiency of statistical tests and research designs as well as preparation of research proposals and reports are included. Qualifying for department honors requires presentation of an acceptable research proposal which will be carried to completion during the remainder of the year. Thirty-two lecture hours, 32 laboratory hours.

**BTPT 353. Therapeutic Exercise II.** (3-64). Correlation of neurophysiological and developmental principles with the application of exercise techniques utilized to facilitate normal neuromuscular mechanisms. Analyses of normal and abnormal movement, mobility versus stability, neurological conditions, and facilitation or inhibition via the application of cold, compression, movement-positioning, resistance, stretch-pressure, traction, and vibration are included. Specific treatment approaches as applied by Bobath, Brunnstrom, and Rood are surveyed. Thirty-two lecture hours, 32 laboratory hours.

*Senior Year, Mini-Semester and first half of Second Semester*

**BTPT 357. Clinical Education IV.** (8-420). Continuation of Clinical Education III. Full-time experience in two separate clinics for six weeks each from January through March of the senior year. Student has increased responsibility for patient evaluation, planning treatment programs, administration of physical therapy, and comprehensive patient care. Hours per week are determined by the clinic. This may vary between 35 to 40 hours per week.

*Senior Year, Second half of Second Semester*

**BTPT 372. Community and Public Health.** (1-16). The concepts of health, community, preventive medicine and the definition of public health are the basis of the course. The health care delivery system is studied in terms of official and voluntary agencies, epidemiology, chronic diseases, and health problems related to occupation, age, and environment. A survey of the background and history of the health care in the United States is presented. Sixteen lecture hours.

**BTPT 364. Administration.** (1-16). Introduction to administration and supervision as it applies to the field of physical therapy. Interpersonal relations, organization, personnel management, and physical and fiscal factors are discussed. Practice is provided for written and oral communications; analyzing and describing duties of physical therapy personnel; writing departmental policies; and planning a physical therapy department. Sixteen lecture hours.

**MPHY 351. Applied Physiology.** (2-48). Prerequisites: MPHY 302, 303. Study of physiological adaptations to stress within normal and pathological states. Includes concepts of work, exercise, energy expenditure, oxygen debt, and body composition. Emphasis is placed on cardiovascular, musculoskeletal, and respiratory functions related to physical activity, normal growth and development, the aging process, and prevention of illness. Sixteen lecture hours, 32 laboratory hours.

*Electives*

**BTPT 380. Community and Public Health.** (1-TBA\*). An independent study and/or seminar designed to meet the needs of students interested in specific health topics. Emphasis is placed on fieldwork and findings of individual investigation.

**BTPT 381. Therapeutic Exercise III.** (1-TBA\*). Independent study by the student to develop expertise beyond that presented in Therapeutic Exercise I and II. The student will demonstrate his expertise during a seminar.

**BTPT 362. Current Literature.** (1-16). Designed to assist the student in evaluating, abstracting, and reporting current scientific literature in a selected area of concentration. Oral, visual, and written communication used for presentations. Two lecture hours, 14 laboratory hours.

**BTPT 382. Honors Senior Seminar.** (1-TBA\*). Prerequisite: BTPT 371 and acceptance of research proposal. Honors candidates present and discuss literature related to their investigations and report the results of their research. Two copies of the completed thesis must be presented to the department for the granting of honors.

**BTPT 388. Special Topics in Physical Therapy.** (1-3 TBA\*). A given number of lecture-laboratory-demonstrations on a special topic presented by specialist(s) in a given area and/or a problem solving experience which is commensurate with the student's interest and ability. Course registration and number of credits to be arranged by the Department Chairman. Open to special students as well as senior physical therapy students.

*\*To be arranged*

**FACULTY**

*Associate Professor*

Hardiman, Clarence W., chairman; BS, University of Florida, 1949; CPT, Duke University, 1950; MS, Florida State University, 1954; PhD, 1964.

Jurf, Amin N., BS, Western Maryland College, 1959; PhD, University of Maryland, 1966.

Latimer, Ruth M., BS, University of Richmond, 1945; CPT, U.S. Army Hospital, 1946; MS, Medical College of Virginia, 1952.

*Assistant Professor*

Doser, Nancy Lou, BS, Longwood College, 1953; CPT, University of Southern California, 1959; MS, Northern Illinois University, 1963; PhD, University of Maryland, 1971.

Little, R. Roger, BS, University of Maryland, 1964; MD, 1968.

Nelson, Christine A., BS, Richmond Professional Institute, 1959; MS, University of Wisconsin, 1963; PhD, University of Maryland, 1973.

Ude, Robert H., BS, University of Missouri, 1966; MS, University of Maryland, 1973.

*Instructors*

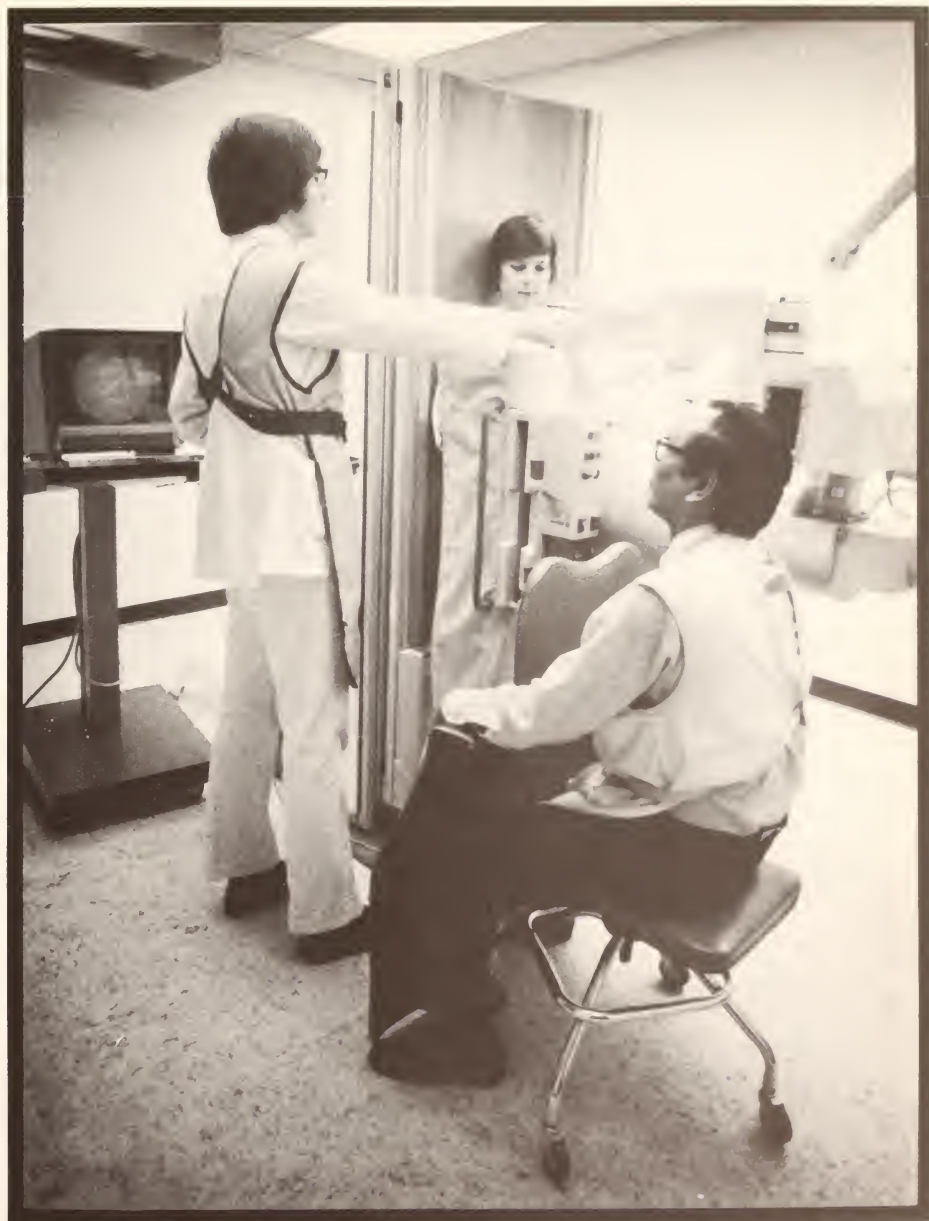
Hamill, Martha T., BS, Boston-Bouve College of Northeastern University, 1967.

Novell, Joan, BS, University of Connecticut, 1955.\*

Stone, Alan L., BA, University of California, 1962; CPT, 1963; MA, University of Southern California, 1973.\*

Violand, Richard L., Jr., BS, Ohio State University, 1968.

*\*part-time*



# **RADIOLOGIC TECHNOLOGY PROGRAM**



The four-year program in radiologic technology, under the School of Medicine at the University of Maryland, leads to a Bachelor of Science degree. The curriculum complies with the requirements and recommendations of the American Registry of Radiologic Technologists, the Committee on Technologists Training of the American College of Radiology and the American Medical Association's Council on Medical Education. Graduates of the program will be eligible to take the examination for certification given by the American Registry of Radiologic Technologists.

## **ADMISSION**

Students may apply for advancement/admission to the radiologic technology program after three semesters of preprofessional work with a cumulative grade-point-average of 2.5. Applications will be received between September 1 and June 30 each year. A personal interview may be required with a member of the Admissions Committee of the Department of Radiology's Division of Radiologic Technology.

Those students who are enrolled in a preprofessional curriculum at a non-University of Maryland campus will be required to have their courses evaluated by the Admissions Office of the Baltimore campus to determine transferability. Deficiencies must be corrected before admission to the program.

An individual, advanced or admitted to the radiologic technology program, who is registered by the American Registry of Radiologic Technology (ARRT) must also meet the same admission/advancement criteria as non-registered individuals. Some credit may be awarded for approved training. Registered technologists should request additional information.

## **APPLICATION TO JUNIOR YEAR**

A student who can realistically meet the academic requirements and wishes to be considered a candidate for the junior class beginning in the fall semester should apply in January of the preceding year. Requests for application should be submitted to:

The Office of Admissions and Registrations  
University of Maryland  
Room 132, Howard Hall  
660 W. Redwood Street  
Baltimore, Md. 21201

The application and all supporting documents should be completed and sent by the first of April. Deliberations begin late in April or in early May and are based upon academic ability, as well as other criteria.

If it is determined that a student can meet all prerequisites, he will be advised about the middle of April of further procedure including the completion of a questionnaire and being interviewed.

## **REGISTRATION**

Freshman and sophomore students are registered on the College Park or Baltimore County campuses. However, students may attend other accredited colleges and transfer into the program at any level up to the junior year. Junior students register on the Baltimore City campus and senior students register at both the Baltimore County and Baltimore City campuses. Attendance at the University of Maryland as a freshman or sophomore student does not guarantee admission to the junior year of the professional program at the Baltimore City campus.

**REQUIRED PREPROFESSIONAL COURSES**

<i>Course</i>	<i>Credit Hours</i>
English	9
Physics	8
Chemistry	8
Biology	8
Speech	3
Math	3
Psychology	3
Sociology	3
Physical Activities	(2 semesters)
Fine arts or Philosophy	3
Electives	<u>12</u>
	60 total

A 2.5 cumulative grade point average in lower division studies is required to advance to the radiologic technology program. It is advisable that the student consult with an advisor within the program as early as possible to choose the proper sequence of electives.

**REQUIRED PROFESSIONAL COURSES**

<i>Course Number</i>	<i>Title</i>	<i>Credit Hours</i>
MDRT 300	Introduction to Radiologic Technology	2
MDRT 311	Physics of Diagnostic Radiology	3
MDRT 312	Fundamentals of Radiographic Technology	3
MDRT 313	Radiologic Anatomy and Physiology	3
MDRT 314	Radiographic Procedures I	4
MDRT 315	Clinical Practicum I	2
MDRT 330	Radiobiology and Protection	2
MDRT 333	Pathology	3
MDRT 334	Radiographic Procedures II	3
MDRT 335	Clinical Practicum II	2
MDRT 336	Departmental Organization and Administration	2
MDRT 340	Introduction to Radiotherapy and Nuclear Medicine	2
MDRT 345	Clinical Practicum III	1
MDRT 364	Specialized Radiographic Procedures	3
MDRT 365	Clinical Practicum IV	2
MDRT 375	Clinical Practicum V	2
MDRT 385	Practicum in Department Administration	2
MDRT 387	Methods of Teaching in Radiologic Technology	2
MDRT 388	Seminar in Radiologic Technology	1
MDRT 389	Senior Thesis	2



## CURRICULUM

**Junior Year.** Fall Semester. 17 credits. The following courses are required: MDRT 300, 311, 312, 313, 314, 315.

Spring Semester. 14 credits. The following courses are required: MDRT 330, 333, 334, 335, 336, 340.

Summer Session. 1 credit. MDRT 345.

**Senior Year.** Fall Semester. 16 credits. The following courses are required: MDRT 364, 385 or 387 (Elective), 365 plus nine (9) hours of electives at UMBC.

Spring Semester. 17 credits. The following courses are required: 12 hours of electives at UMBC; MDRT 375, 388 and 389.

## UNDERGRADUATE MEDICAL PROGRAM

**MDRT 300. Introduction to Radiologic Technology (2).** Fall semester. An overview of radiologic technology through the study of its historical development and its place in the medical field today; the various subdivisions of radiology (diagnostic, therapy and radioisotopes); the organization of the modern radiology department and its personal needs; professional adjustment, and medicolegal aspects of radiology. The course will include direct observation and experience, field trips and guest speakers.

**MDRT 311. Physics of Diagnostic Radiology (3).** Prerequisite, two semesters of physics. Fall semester. This course includes the nature and production of radiation, its measurement, absorption and interaction processes; x-ray equipment construction, evaluation and circuitry; image intensifiers, TV, seriographs, body-section radiography, and functions and construction of radiographic accessories.

**MDRT 312. Fundamentals of Radiologic Technology (3).** Prerequisites, two semesters of chemistry. Fall semester. The chemistry of radiographic processing, processing methods and departmental design, is studied as related to processing, the identification and interpretation of artifacts, maintenance of automatic processors, film characteristics, accessories, exposure parameters and densitometry. Field trips, guest speakers, demonstrations, experiments and labs are included.

**MDRT 313. Radiologic Human Anatomy and Physiology (3).** Prerequisites, two semesters of biology. Fall semester. Human anatomy and physiology are studied with emphasis on radiographic identification of structures and comparison of normal vs. abnormal functioning. This includes lectures, demonstrations and labs.



**MDRT 314. Radiographic Procedures I (4).** Fall semester. Included in this course are medical terminology and nursing procedures common to the general radiographic situation and basic principles and methods of radiography with emphasis on the skeletal system, especially the skull, chest and abdomen. This also includes lectures, demonstrations, labs and clinical experience.

**MDRT 315. Clinical Practicum I (2).** Fall semester. Students receive supervised clinical practice in radiographic examinations covered in Radiographic Procedures I (20 hours per week). A weekly one-hour seminar is also part of the course.

**MDRT 330. Radiobiology and Protection (2).** Prerequisites, MDRT 311 and 313. Spring semester. Principles of radiobiology, genetic and somatic effects of radiation, basic radiation monitoring surveys and techniques of protecting the patient and personnel are studied through labs and experimentation.

**MDRT 334. Radiographic Procedures II (3).** Prerequisites, one semester each of psychology and sociology, MDRT 314 and 315. This course includes the study of procedures requiring the use of contrast media, specifically the gastrointestinal and urinary tracts; evaluation of contrast media, and special technical and psychosocial requirements in pediatric radiography. Teaching will be by means of lectures, demonstrations and field trips in pediatric radiography and technical evaluation of radiographs.

**MDRT 333. Pathology (3).** Prerequisite, MDRT 313. Spring semester. Students study the nature and etiology of disease, review medical and surgical diseases and learn how these diseases are diagnosed via radiographic techniques. Guest lectures will be included.

**MDRT 335. Clinical Practicum II (2).** Corequisite, MDRT 334. Spring semester. Students receive clinical observation experience and supervised practice in fluoroscopic urographic procedures and pediatric radiography (20 hours per week).

**MDRT 336. Departmental Organization and Administration (2).** Prerequisites, one semester each of psychology and sociology. Spring semester. Principles of administration and supervision in departments of radiology are explored as well as personnel and intra- or interdepartmental problems.

**MDRT 340. Introduction to Radiotherapy and Nuclear Medicine Technology (2).** Prerequisite, MDRT 311. Corequisites, MDRT 330 and 333. Spring semester. Students explore the goals of radiotherapy and nuclear medicine, basic equipment and procedures and the physics of radiotherapy and nuclear medicine.



**MDRT 345. Clinical Practicum III (1).** Prerequisite, MDRT 340. Summer semester. Students are observed and supervised in nuclear medicine and radiotherapy (30 hours per week).

**MDRT 364. Specialized Radiographic Procedures (3).** Fall semester. Included in this course is the study of indications, techniques and equipment necessary in vascular and neuroradiography as well as discussions and demonstrations of anatomical structures and disease processes. Guest lectures given.

**MDRT 365. Clinical Practicum IV (2).** Prerequisite, MDRT 335. Fall semester. Observation and supervised clinical experience is provided in vascular and neurological radiography. Experience is also gained in sterile technique procedures associated with these examinations (20 hours per week).

**MDRT 375. Clinical Practicum V (2).** Prerequisite, MDRT 365. Spring semester. Clinical experience in general radiography gives the student an opportunity to exhibit independent judgment and latitude. Areas of assignment will be selected on an individual basis to meet the needs and interests of the student (20 hours per week).

**MDRT 388. Seminar in Radiologic Technology (1).** Spring semester. Discussion regarding technical, organizational and personal problems encountered in clinical Practicum MDRT 375 and a review of current literature in radiologic technology.

**MDRT 389. Senior Thesis (2).** Spring semester. The student will conduct independent research in an area of his interest and will present the results of his study in thesis form.

#### *Electives*

All students will be required to select one of the following:

**MDRT 385. Practicum in Departmental Management (2).** Fall semester. Students receive clinical experience in advanced technical problems, supervision and basic administrative functions (five hours per week). There is also a seminar in advanced problems.

**MDRT 387. Methods of Teaching in Radiologic Technology (2).** Fall semester. The course includes principles of teaching applied in radiologic technology including observation and practice teaching.

## FACULTY

#### *Professor*

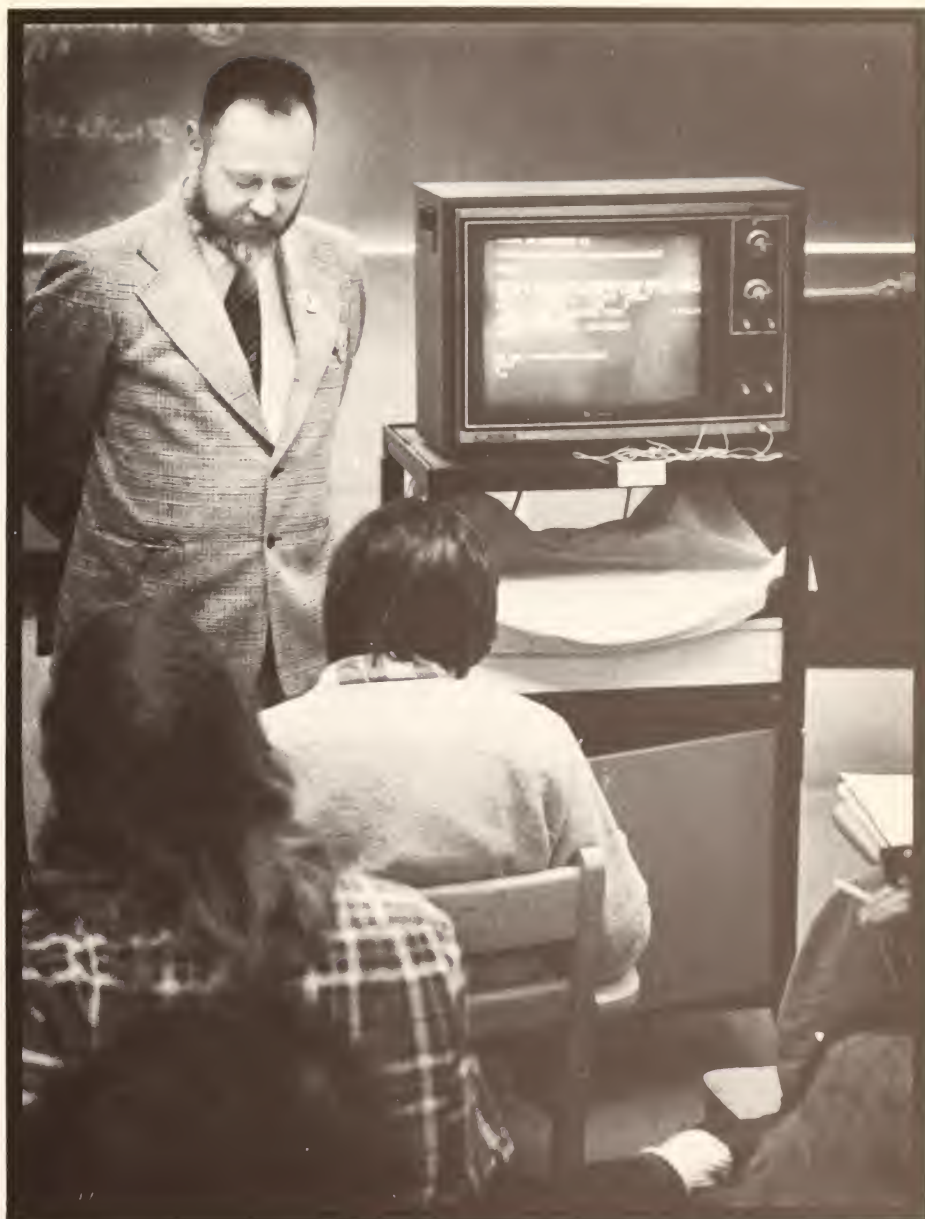
Dennis, John M., Dean, School of Medicine and Medical Director, Radiologic Technology Program; BS, University of Maryland, 1943; MD, 1945.

#### *Assistant Professor*

Williams, John Powell, Director, Section of Neuroradiology, Department of Radiology; BA, University of Virginia, 1956; MD, Medical College of Virginia.

#### *Instructor*

Warner, Sandra L., Program Director, Division of Radiologic Technology; BS, Towson State College, 1971.



**FACULTY**



**ANATOMY***Professor*

Guth, Lloyd, chairman; BA, New York University, 1949; MD, 1953.

Brantigan, Otto C., BS, Northwestern University, 1931; MD, 1934.\*

Hall-Craggs, E. C. B., BA, Cambridge University, 1947; MB, BChir, 1949; MA, 1959; PhD, London, 1965.

Krahl, Vernon, BS, University of Pittsburg, 1939; MS, 1940; PhD, University of Maryland, 1946.

Young, M. Wharton, BS, Howard University, 1926; PhD, University of Michigan, 1934; MD, Howard University, 1930.\*

*Associate Professor*

Donati, Edward, BA, King's College, 1951; PhD, University of Maryland, 1964.

Mech, Karl, Sr., BS, University of Maryland, 1932; MD, 1935.\*

Rennels, Marshall L., BS, Eastern Illinois University, 1961; MA, University of Texas Medical Branch, 1964; PhD, 1966.

Wadsworth, Gladys, BS, Eastern Illinois University, 1961; MS, University of Texas, 1964; PhD, 1966.

*Assistant Professor*

Barrett, Charles, BS, King's College, 1957; PhD, University of Maryland, 1969.

Bulmash, Melvin, BA, Johns Hopkins University, 1946; DDS, University of Maryland, 1950; MS, 1969.\*

Gearhart, John D., BS, Pennsylvania State University, 1964; MS, University of New Hampshire, 1966; PhD, Cornell University, 1970.

Klein, Albert, BA, Washington and Jefferson College, 1964; PhD, Duke University, 1973.

Oh, Tae H., BS, Seoul National University, 1966; MS, University of Saskatchewan, 1971; PhD, 1973.

Petersen, Kyle, BS, George Washington University, 1964; MS 1965; PhD, 1968.

Petralli, John, BS, Davis and Elkins College, 1955; PhD, University of Maryland, 1969.\*

Ramsay, Frederick J., associate dean for student affairs; BS, Washington and Lee University, 1958; MS, University of Illinois, 1960; PhD, 1962; MEd, 1969.\*

Reier, Paul, BS, Cleveland State University, 1968; PhD, Case Western Reserve, 1972.

Schulter, Frances, BS, Birmingham Southern College, 1952; MS, Emory University, 1954; PhD, George Washington University, 1971.

**ANESTHESIOLOGY***Professor*

Helrich, Martin, chairman; BS, Dickinson College, 1946; MD, University of Pennsylvania, 1946.

Joseph, Samuel I., AB, DePauw University, 1939; MS, New York University, 1941; PhD, 1943; MD, Wayne University, 1947.

McAslan, T. Crawford, MB, ChB, University of Glasgow, 1945.

*Associate Professor*

Chodoff, Peter, BS, Temple University, 1947; MD, Jefferson Medical College, 1951.\*

Glassman, Lionel, MD, University of Toronto, 1945.\*

Selvin, Beatrice L., BA, University of Michigan, 1942; MD, New York Medical College, 1945.

*Assistant Professor*

Ashman, Michael, BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.

Kaplow, Sheppard, MD, Dalhousie University, 1959.\*

Keller, Melvin L., BS, University of Illinois, 1945; DDS, University of Detroit, 1948; MD, University of Amsterdam, 1955.\*

Liteanu, Michael, MD, Free University of Brussels, 1949.\*

Matjasko, M. Jane, BA, Mercyhurst College, 1964; MD, Medical College of Pennsylvania, 1968.

Mergner, Gertrud, MD, University of Iowa, 1967.\*

Parelhoff, Merrill E., BS, University of Maryland, 1944; MD, 1949.\*

Penafiel, Mario L., University of Santo Thomas, 1955; MD, 1960.

Shin, Baekhyo, College of Arts and Sciences, Korea, 1961; MD, College of Medicine, Korea, 1965.

*Instructor*

Del Rosario, Romeo S., AB, Philippine Union College, 1953; MD, Manila Central University, 1958.

Duarte, Jose G., MD, University of Mexico, 1958.

Goldman, Edwin J., BS, University of New Brunswick, 1956; MD, Dalhousie University, 1960.\*

Lee, Florette T., Intermediate of Science, University of Rangoon, 1962; MB, BS, Institute of Medicine, Rangoon, 1968.

Millan, Ellen Ann, BA, George Washington University, 1959; MD, University of Maryland, 1964.

Mostello, Lucille A., BA, Seton Hill College, 1966; MD, Johns Hopkins University, 1970.

**BIOLOGICAL CHEMISTRY***Professor*

Adams, Elijah, chairman; BA, Johns Hopkins University, 1938; MD, University of Rochester, 1942.

Bucci, Enrico, MC, Liceo Mamiani, Italy, 1950; MD, University of Rome, 1956; PhD (biochemistry), 1965.

Frank, Leonard H., BA, University of Oklahoma, 1950; PhD, Johns Hopkins University, 1957.

Pomerantz, Seymour H., BA, Rice Institute, 1948; PhD, University of Texas, 1952.

*Associate Professor*

Black, Lindsay W., BS, Morgan State College, 1954; PhD, Johns Hopkins University, 1965.

Kirtley, Mary E., BA, University of Chicago, 1957; MA, Smith College, 1958; PhD, Western Reserve, 1964.

Salahuddin, Ahmad (visiting, research), MSc, Aligarh Muslim University, 1957; PhD, Duke University, 1968.

*Assistant Professor*

Bucci, Clara F., MC, Liceo Volpicelli, Italy, 1952; MD, University of Rome, 1956; PhD, 1964.

Rao, Nimmagadda, BS, Madras University, India, 1954; MS, Saugar University, 1956; PhD, Madras University, 1963.

Rosen, Barry P., BS, Trinity College, 1965; MS, University of Connecticut, 1969; PhD, 1969.

Waechter, Charles J., AA, Baltimore Junior College, 1963; BS, University of Maryland, 1966; PhD, University of Kentucky, 1971.

*Instructor*

Brown, Ann Virginia, AB, Goucher College, 1940.

*Associate*

Castillo, Carlos J., MD, Universidad Nacional de Colombia, 1964; PhD, University of Pennsylvania, 1973.

Eby, Denise, BS, St. Joseph College, 1939; MS, Catholic University, 1953; PhD, University of Maryland, 1970.

Hasan, Syed M., MS, Osmania University, 1964; PhD, University of Hawaii, 1975.

Man, Ming, BS, Wisconsin State University, 1969; PhD, University of Minnesota, 1974.

Ramaswamy, S., BSc, Madras University, 1965; MSc, 1969; PhD, 1975.

Tsuchiya, Tomofusa, BS, University of Tokyo, 1968; PhD, 1973.

**BIOPHYSICS***Professor*

Mullins, Lorin J., chairman; BS, University of California, 1937; PhD, 1940.

Sjodin, Raymond A., BS, California Institute of Technology, 1951; PhD, University of California, 1955.

*Associate Professor*

Beauge, Luis, MD, Cordoba National University, Argentina, 1961; PhD, 1964.

Hybl, Albert, BA, Coe College, 1954; PhD, California Institute of Technology, 1961.

*Assistant Professor*

Geduldig, Donald S., BEE, Cornell University, 1955; MS, 1957; PhD, Columbia University, 1965.

**FAMILY PRACTICE PROGRAM***Professor*

Kowalewski, Edward J., chairman; BS, Franklin and Marshall College, 1941; MD, George Washington University, 1945.

*Associate Professor*

Davis, LeRoy T., BS, Westminster College, 1948; MS, Syracuse University, 1951; PhD, 1954; MD, New York Medical College, 1961.

Guyther, Joseph R., BS, University of Maryland, 1941; MD, 1943.\*

Khan, Misbah, BS, MD, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.\*

Morton, Richard, BSC, University of London, 1943; MBBS, 1953; MPH, UCLA, 1970.\*

*Assistant Professor*

Alevizatos, Aristides C., AB, Washington & Lee University, 1956; MD, University of Maryland, 1960.\*

Bronushas, B. Joseph, BS, Loyola College, 1946; MD, University of Maryland, 1950.

Harvey, John E., BA, Harvard University, 1956; MD, University of North Carolina, 1960.\*

Hill, Charles E., BS, Loyola College, 1956; MD, University of Maryland, 1960.

Koetter, Hans J., MD, Frankfurt, Germany, 1951.\*

Lilly, John R., BA, Gettysburg College, 1958; MD, Temple University, 1963.\*

McKay, J. Nelson, MD, University of Maryland, 1952.\*

Pachuta, Donald M., BA, Niagra University, 1962; MD, State University of New York at Buffalo, 1966.\*

Perry, Morris, MA&S, Georgetown University, 1944; MD, 1948.\*

Roth, Albert, BS, New York University, 1936; MRCS/LRCP, Medical College, St. Bartholomew's University of London, 1942; MB, BS, 1943.\*

Savarese, Charles J., AB, University of North Carolina, 1942; MD, George Washington University, 1950; FACC, Fellow, American College of Cardiology, 1967.\*

Shochet, Bernard R., BS, University of Maryland, 1952; MD, 1954.\*

Weintraub, William C., BS, George Washington University, 1949; MD, Jefferson Medical College, 1955.

Weir, W. Douglas, consultant in psychiatry; AB, St. John's College, 1958; MD, University of Maryland, 1964.\*

Welliver, Daniel I., BA, Western Maryland College, 1950; MD, University of Maryland, 1954.\*

*Instructor*

Daniels, Alfred J., BS, Fordham College, 1964; MD, Einstein College of Medicine, 1968.

Gross, Harvey, AB, Columbia University, 1966; MD, Boston University Medical Center, 1970.

Hoopes, John M., BS (pharmacy), Ohio Northern University, 1970; PhD, Duquesne University, 1974.\*

Knipp, Harry, BS, George Washington University, 1947; MD, University of Maryland, 1951.\*

Meade, Neil A., AB, Lafayette College, 1967; MD, Albert Einstein College Medical School, 1971.

Meadors, Gilcin F., III, AB, Brown University, 1966; MD, Albert Einstein College Medical School, 1971.

Mercer, Philip, BS, Wheaton College, 1955; MD, University of Maryland, 1959.\*

Novak, Theresa M., RN, Georgetown University, 1947; BSNE, University of Maryland, 1958.

Olsen, Louis Odin, BS, University of Maryland, 1961; MD, 1965.\*

O'Rourke, William, BS, Wheaton College, 1958; MD, University of Missouri, 1963.\*

**INTERNATIONAL MEDICINE***Professor*

Clyde, David F., chairman; BA, University of Kansas, 1946; MD, McGill University, 1948; DTMH, London School of Hygiene and Tropical Medicine, 1952; PhD, University of London, 1963.

Andrade, Zilton, BS, Colegio Estadual da Bahia, Salvador, Brazil, 1945; MD, Universidade Federal da Bahia, 1950.\*

Barnett, Herbert C., BS, Cornell University, 1939; MS, University of Minnesota, 1946; MPH, University of Pittsburgh, 1953; PhD, 1954.



*Associate Professor*

- Aslamkhan, Mohammed, BS, Punjab University, 1951; MS, 1953; D Sc, Johannes Gutenberg Universitat, 1963.
- Baker, Richard H., BS, University of Illinois, 1958; MS, 1962; PhD, 1965.
- Bhalla, Satish C., BS, East Punjab University, 1954; MS, 1956; MA, University of Kansas, 1963; PhD, University of Notre Dame, 1966.

*Assistant Professor*

- McCarthy, Vincent C., BA, University of Toronto, 1953; MS, University of Maryland, 1961; PhD, 1967.
- Sakai, Richard K., BA, Boston University, 1959; MA, University of Hawaii, 1964; PhD, 1968.

*Associate*

- Ainsley, Richard W., BS, San Diego State University, 1968; PhD, University of Texas at Austin, 1974.
- Moriearty, Pamela L., BS, University of Chicago, 1966; MS, 1969; PhD, 1972.
- Reisen, William K., BS, University of Delaware, 1967; MS, Clemson University, 1968; PhD, University of Oklahoma, 1974.
- Terwedow, Henry, BS, University of Notre Dame, 1968; MA, Montclair State College, 1969; PhD, University of Notre Dame, 1973.

**MEDICINE***Professor*

- Woodward, Theodore E., chairman; BS, Franklin and Marshall College, 1934; MD, University of Maryland, 1938; DSc (honorary), Western Maryland College, 1950; DSc (honorary), Franklin and Marshall College, 1954.
- Bereston, Eugene, dermatology; AB, Johns Hopkins University, 1933; MD, University of Maryland, 1937; MSc, University of Pennsylvania, 1945; DSc, 1955.\*
- Connor, Thomas B., BA, Loyola College, 1943; MD, University of Maryland, 1946.
- Greisman, Sheldon E., MD, New York University, 1949.
- Hornick, Richard B., AB, Johns Hopkins University, 1951; MD, 1955.
- Iber, Frank, BA, Miami University, 1948; MA, 1949; MD, Johns Hopkins University, 1953.
- Karns, James R., BS, University of Maryland, 1939; MD, 1940.\*
- Lisansky, Ephriam T., BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.\*
- Mead, Joseph, AB, Loyola College, 1954; MD, University of Maryland, 1958.\*
- Rapoport, Morton I., BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.\*
- Robinson, Harry M., Jr., BS, University of Maryland, 1931; MD, 1935.\*
- Scherlis, Leonard, AB, Johns Hopkins University, 1942; MD, 1945.
- Shapiro, Albert, dermatology; BS, University of Maryland, 1934; MD, 1937.\*
- Smith, Vernon M., MD, Temple University, 1949.
- Wiswell, John G., BA, Dalhousie University, 1938; BS, 1940; MDCM, 1943.

*Associate Professor*

- Buddemeyer, Edward U., BA, Gettysburg College, 1955; ScD, Johns Hopkins University, 1968.
- Burnett, Joseph W., AB, Yale University, 1954; MD, Harvard Medical School, 1958.\*
- Calia, Frank M., AB, Harvard College, 1958; MD, Tufts Medical School, 1962.
- Cooper, Malcolm, MB, ChB, University of Edinburgh, 1960.
- Cotter, Edward F., MD, University of Maryland, 1935.\*
- Goodman, Jay S., MD, University of Maryland, 1961.
- Jiji, Rouben M., MD, Royal College of Medicine, Baghdad, Iraq, 1950.
- Kerr, Harry D., BS, Maryville College, 1951; MD, Temple University, 1956.
- Kushner, Herbert A., AB, Franklin and Marshall College, 1956; MD, Johns Hopkins University, 1960.\*
- Lee, Yu-Chen, BS, Taikoku Imperial University, 1945; MD, National Taiwan University, Formosa, 1949.
- Levine, Myron M., BS, City College of New York, 1963; MD, Medical College of Virginia, 1967.
- Little, John R., MB, ChB, University of Otago, N. Z., 1959; PhD, 1965.
- Martin, Luis G., MD, Madrid Medical School, 1954.

Mitchell, Thomas G., BS, St. Joseph's College, 1950; MS, University of Rochester, 1956; PhD, Georgetown University, 1963.\*  
 Morrison, Samuel, gastroenterology; AB, Johns Hopkins University, 1925; MD, 1929.\*  
 Parker, Robert T., AB, Johns Hopkins University, 1941; MD, 1944.\*  
 Raskin, Howard F., BA, Johns Hopkins University, 1945; MD, University of Maryland, 1949.\*  
 Raskin, Joan, BA, Goucher College, 1951; MD, University of Maryland, 1955.\*  
 Reed, Julian, BS, University of Maryland, 1948; MD, 1952.\*  
 Sadler, John H., BS, Duke University, 1956; MD, 1960.  
 Simpson, David G., MB, BCh, Queen's University, Belfast, 1942; MD, 1950.  
 Singleton, Robert T., BS, University of Maryland, 1951; MD, 1953.  
 Snyder, Merrill J., BS, University of Pittsburgh, 1940; MS, University of Maryland, 1950; PhD, 1953.  
 Togo, Yasushi, BS, Tokyo Kotogakke, Japan, 1941; MD, University of Tokyo, 1945.  
 Wiernik, Peter H., BA, University of Virginia, 1961; MD, 1965.\*  
 Zieve, Phillip D., AB, Franklin and Marshall College, 1954; MD, University of Maryland, 1958.

#### *Assistant Professor*

Alevizatos, Aristides C., AB, Washington and Lee University, 1956; MD, University of Maryland, 1960.  
 Amsel, Sheldon, BS, Pennsylvania State University, 1957; MD, Jefferson Medical School, 1961.  
 Antlitz, Albert, BS, Georgetown University, 1951; MD, 1955.\*  
 Atkins, John L., AB, Mount St. Mary's College, 1932; MD, University of Pennsylvania, 1936.\*  
 Austin, Stephen M., AB, Amherst College, 1963; MD, SUNY, Downstate Medical Center, 1967.  
 Baum, Richard A., AB, Brown University, 1964; MD, University of Maryland, 1968.  
 Buendia, Nicholas, BA, Liceo de Cervantes, Bogota, Colombia, 1952; MD, Javeriana University, 1960.\*  
 Burkle, Joseph H., BA, University of Pennsylvania, 1940; MD, 1943.\*  
 Carlton, Gary, BS, Eastern New Mexico University, 1965; MS, 1968; PhD, Texas A&M University, 1971.\*  
 Carozza, Nijole B., BS, University of Maryland, 1961; MD, 1963.  
 Carter, Ethelred E., MD, Universidad Autonoma d Guadalajara, Mexico, 1968.  
 Cohen, Miriam, MD, University of Maryland, 1964.  
 Cooper, Martin B., MD, Chicago Medical School, 1967.\*  
 DeFelice, Charles E., BS, University of Maryland, 1962; MD, 1967.  
 Dembo, Donald H., AB, Johns Hopkins University, 1951; MD, University of Maryland, 1955.\*  
 Donohue, Salvatore R., BA, Loyola College, 1959; MD, University of Maryland, 1964.  
 Dureza, Renan J., AA, University of St. Augustine, 1959; MD, University of Santo Tomas, Philippines, 1961.\*  
 Ebeling, William C., III, BS, University of Maryland, 1943; MD, 1944.\*  
 Epstein, Barry H., AB, Columbia University, 1960; MD, Chicago Medical School, 1964.\*  
 Esterhay, Robert J., Jr., BA, Harvard University, 1965; MD, Case Western Reserve University, 1969.\*  
 Fisher, Michael L., MD, University of Illinois, 1967.\*  
 Foreman, Spencer, BS, Ursinus College, 1957; MD, University of Pennsylvania, 1961.\*  
 Fratto, Carmen A., BS, University of Maryland, 1958; MD, 1962.\*  
 Freedman, Stanley, AB, Harvard College, 1957; MD, New York University, 1961.\*  
 Gilman, Robert, BS, Bates College, 1960; MD, Downstate Medical Center, 1965.  
 Gimbel, Kenneth S., BS, Brooklyn College, CUNY, 1964; MD, University of Louisville, 1968.  
 Goldner, Ronald, BS, University of Maryland, 1960; MD, 1965.  
 Hamilton, Bruce P., MB, ChB, University of Otago, New Zealand, 1960.  
 Hankin, Samuel, MD, University of Maryland, 1928.\*  
 Hobbins, Thomas E., AB, University of Pennsylvania, 1961; MD, Hahnemann Medical College, 1965.  
 Hookman, Perry, BA, New York University, 1954; MD, State University of New York, 1958.\*  
 Jackson, Jean, BS, University of Rhode Island, 1963; MD, University of Maryland, 1967.  
 Janoski, Alfonso H., BA, Seton Hall University, 1957; MD, Columbia University, 1961.  
 Kochman, Leon, MD, University of Pennsylvania, 1933.\*  
 Knowles, Raymond E., Jr., AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.\*  
 Levi, John A., MB, BS, University of Sydney, 1967; MRACP, Royal Australian College of Physicians, 1970.\*  
 Levine, Myron Max, BS, City College of New York, 1963; MD, Medical College of Virginia, 1967.  
 Lewandowski, Anthony A., BS, Loyola College, 1951; MD, University of Maryland, 1955.\*

- Libonati, Joseph P., MS, Duquesne University, 1965; PhD, University of Maryland, 1968.
- List, Noel D., MD, State University of New York, 1965; MPH, Harvard University, 1967.
- Loberg, Michael D., BS, Trinity College, 1969; MS, Washington University, 1972; PhD, 1973.
- McIlhaney, Marylou, BA, University of Texas, 1939; MD, Vanderbilt University, 1944.\*
- Merritt, John, AB, Dartmouth College, 1954; MD, Yale University, 1958.\*
- Miller, Roger M., AB, Dartmouth College, 1959; MD, Jefferson Medical College, 1963.\*
- Mobarhan, Sohrab, MD, University of Rome, Italy, 1965.
- Nowakowski, Andrew, BS, Brooklyn College, 1962; MD, Downstate Medical Center, 1966.
- O'Connell, Michael J., BA, University of Minnesota, 1966; MD, 1969.\*
- Pachuta, Donald M., BA, Niagra University, 1962; MD, State University of New York at Buffalo, 1966.
- Papadopoulos, Chris, MS, BCH, University of Alexandria, Egypt, 1956.\*
- Payne, Charles B., BS, Yale University, 1952; University of Pennsylvania, 1956.
- Quinlan, James, BS, University of Maryland, 1962; MD, 1966.
- Ramos, Emilio, BA, St. Joseph University, Lebanon, 1955; MD, 1963.
- Rusche, Edward, MD, University of Leyden, the Netherlands, 1954.
- Salan, Jerry, BA, St. John's College, 1954; MD, University of Maryland, 1960.\*
- Sampliner, Richard E., BA, Yale University, 1963; MD, Western Reserve University, 1967.
- Schiffer, Charles A., AB, Brandeis University, 1964; MD, New York University, 1968.
- Schimppf, Stephen C., BA, Rutgers University, 1963; MD, Yale University, 1967.\*
- Schmidt, Marcia C., BS, University of Colorado, 1963; MD, University of Florida, 1967.
- Serpick, Arthur, BS, University of Maryland, 1956; MD, 1959.\*
- Shaw, Charles E., BS, University of Maryland, 1942; MD, 1944.\*
- Silverstein, Emanuel, BS, University of Maryland, 1957; MD, 1960.\*
- Sina, Bahram, MD, Faculte de Medecine de Paris, 1955.\*
- Smoot, Roland T., BS, Howard University, 1948; MD, 1952.\*
- Standiford, Harold C., AB, Johns Hopkins University, 1960; MD, University of Maryland, 1964.\*
- Swisher, Kyle Y., Jr., MD, University of Maryland, 1948.\*
- Tudino, Mattia, BS, Providence College, 1953; MD, University of Bologna, Italy, 1960.\*
- Wentz, Dennis K., ass't dean for affiliations; BA, North Central College, 1957; MD, University of Chicago, 1961.
- Woodward, Celeste L., BA, University of Aix-Marseilles, France, 1932; MD, University of Maryland, 1938.\*
- Woodward, William E., AB, Princeton University, 1961; MD, Johns Hopkins University, 1965.
- Yaffe, Stanley N., BS, University of Maryland, 1941; MD, 1944.\*

### *Instructor*

- Aisner, Joseph, BS, Wayne State University, 1965; MS, Indiana University, 1966; MD, Wayne State University, 1970.
- Appelfeld, Mark M., BS, Washington and Lee University, 1965; MD, University of Maryland, 1969.
- Austin, Perry, AB, Princeton University, 1943; MD, Columbia College of Physicians and Surgeons, 1947.\*
- Awalt, Lawrence F., BS, Loyola College, 1956; MD, University of Maryland, 1960.
- Biggs, Richard D., Jr., BA, Princeton University, 1960; MD, University of Maryland, 1964.\*
- Chang, Paul, BA, Harvard University, 1966; MD, Columbia University, 1970.
- Dear, William, BS, University of Maryland, 1959; MD, 1964.\*
- Fiocco, Vincent J., AB, Columbia College, 1954; MD, University of Maryland, 1957.\*
- Gonzalez, Luis F., MD, University of Maryland, 1952.\*
- Grenzer, Louis, AB, Duke University, 1962; MD, University of Maryland, 1966.\*
- Hammann, John, BS, Loyola College, 1953; MD, University of Maryland, 1957.\*
- Hayes, Michael, BS, University of Maryland, 1959; MD, 1963.\*
- Hoppe Backus, Ruth, BS, Michigan State University, 1965; MD, University of Michigan, 1969.
- Inayatullah, Mohammad, MS, BS, King Edward Medical College, Lahore, Pakistan, 1956.\*
- Karpers, Bernard S., BS, Loyola College, 1958; MD, University of Maryland, 1962.\*
- Kilpe, Vilis, BA, DePauw University, 1958; MD, Washington University, 1962.\*
- Lawrence, George, BS, Hobart College, 1959; MD, Tufts Medical College, 1963.\*
- McPhillips, James, BA, LaSalle College, 1959; MD, SUNY Downstate Medical Center, 1963.\*
- Mather, Susan, BS, University of Maryland, 1964; MD, 1965.
- Messina, John J., BA, Johns Hopkins University, 1956; MD, University of Maryland, 1960.\*
- Miller, Louis W., BS, University of Maryland, 1963; MD, 1967; MPH, Johns Hopkins School of Hygiene and Public Health, 1969.
- Nagel, David, BS, Loyola College, 1960; MD, University of Maryland, 1964.\*



Nolan, James J., BS, Loyola College, 1937; MD, University of Maryland, 1941.\*  
 Owens, L. Kemper, BS, Franklin and Marshall College, 1948; MD, University of Chicago, 1960.\*  
 Plotnick, Gary D., AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.  
 Rivera, Luis E., BS, University of Puerto Rico, 1965; MD, 1969.\*  
 Robbins, E. Lee, BA, Dartmouth College, 1960; MD, University of Maryland, 1964.\*  
 Saunders, Elijah, BS, Morgan State College, 1956; MD, University of Maryland, 1960.\*  
 Schlossberg, Barry J., BA, Johns Hopkins University, 1964; MD, University of Maryland, 1968.\*  
 Stephenson, Richard R., BS, University of Maryland, 1958; MD, 1962.\*  
 Stoner, Robert, BA, Rutgers University, 1960; MD, University of Maryland, 1964.\*  
 Updike, Ralph E., BS, University of Maryland, 1958; MD, 1962.\*  
 Wolfe, Irving D., BA, Johns Hopkins University, 1963; MD, University of Maryland, 1968.\*

#### *Associate*

Agapitos, George, MD, University of Athens, 1948.\*  
 Blazek, Charles, AB, Columbia College, 1942; MD, College of Physicians and Surgeons, Columbia University, 1945.\*  
 Bollinger, M. Susan, AB, Immacula College, 1962; MD, University of Maryland, 1968.\*  
 Camitta, Francine D., AB, University of Pennsylvania, 1959; MD, Hahnemann Medical College, 1963.\*  
 Furnary, Joseph, BS, University of Pittsburgh, 1938; MD, University of Maryland, 1942.\*  
 Gould, William, BS, Duke University, 1961; MD, University of Maryland, 1965.\*  
 Hansen, Sharon L., BS, Beaver College, 1960.\*  
 Heyman, Meyer R., BS, University of Maryland, 1966; MD, 1970.  
 Karfgin, Walter, BS, Washington College, 1932; MD, University of Maryland, 1936.\*  
 Knoch, H. Roebing, MD, Temple University, 1941.\*  
 Lopez, Carlos E., BS, University of Puerto Rico, 1965; MD, 1969.  
 McConville, John, BS, Alfred University, 1965; MA, Teachers College, Columbia University, 1967.  
 Mueller, Paul, BS, Loyola College, 1951; MD, University of Maryland, 1955.\*  
 O'Mansky, Samuel I., BA, Duke University, 1952; MD, 1957.\*  
 Plott, Michael F., AB, Loyola College, 1960; MD, Georgetown University, 1964.  
 Richman, Elaine A., BA, SUNY at Stony Brook, 1971.  
 Roig, Ramon, BS, University of Puerto Rico, 1955; MD, University of Maryland, 1959.\*  
 Samelson, Lee, PhD, University of Chicago, 1948; MD, Harvard Medical School, 1952.\*  
 Shear, Joseph, BS, Pharm., University of Maryland, 1943; MD, 1947.\*  
 Steinbach, Stanley, AB, Johns Hopkins University, 1942; MD, University of Maryland, 1945.\*  
 Townshend, Wilfred, AB, Johns Hopkins University, 1936; MD, University of Maryland, 1940.\*  
 Van Lill, Stephen J., AB, Duke University, 1938; MD, University of Maryland, 1943.\*  
 Warner, Larry J., BS, University of Maryland, 1963; MD, 1967.\*  
 Weber, Ralph, BS, Franklin and Marshall College, 1949; MD, Temple University, 1954.\*

#### *Emeritus*

Krause, Louis A. M., MD, University of Maryland, 1917.  
 Love, William S.

## **MICROBIOLOGY**

#### *Professor*

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#### *Associate Professor*

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 Fiset, Paul, BA, Laval University, Quebec, 1944; MD, 1949; PhD, University of Cambridge, England, 1956.  
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*Assistant Professor*

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**NEUROLOGY***Professor*

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*Associate Professor*

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*Assistant Professor*

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Kramer, Morton D., AB (pharmacy), University of Maryland, 1950; MD, 1955.\*

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Oleynick, Anatol H., AB, University of Pennsylvania, 1952; MD, University of Chicago, 1956.\*

Sutton, Granger G., BS, Massachusetts Institute of Technology, 1952; MD, University of Maryland, 1958.

Teitelbaum, Harry A., BS, University of Maryland, 1929; PhD, 1936.\*

Toro, Rodrigo, AB, Colegio "Deogracias Cardona", Columbia, 1952; MD, Universidad Nacional, 1959.

*Instructor*

Al-Marashi, Murtadha, BB, CHB, University of Baghdad, 1962.\*

Belega, A. Gary, BS, University of Maryland, 1966; MD, 1970.\*

Eckholdt, John W., AB, University of Minnesota, 1959; BS, 1961; MD, 1963.\*

Forbes, Michael S., BA, University of Virginia, 1966; PhD, 1971.

Hulfish, Barbara, BA, American University, 1944; MD, University of Rochester, 1952.\*

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Law, William, AB, Loyola College, 1957; MD, University of Maryland, 1962.\*

Robbins, Solomon, BA, University of Florida, 1961; MD, Medical College of Georgia, 1965.\*

Salan, Sandra, BS, University of Maryland, 1965; MD, 1966.\*

Wagner, Arthur M., BA, University of Pennsylvania, 1966; MD, University of Maryland, 1970.

Wexler, Ira, BS, Rensselaer Polytechnic Institute, 1957; MS, Downstate Medical Center, 1959; PhD, 1963; MD, 1966.

*Associate*

Plantholt, Barbara A., BS, Mt. St. Agnes College, 1965; MT, ASCP, Mercy Hospital School of Medical Technology, 1965.

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**OBSTETRICS AND GYNECOLOGY***Professor*

Haskins, Arthur L., chairman; BA, University of Rochester, 1938; MD, 1943.  
 Allen, Willard M., BS, Hobart College, 1926; MS, University of Rochester, 1929; MD, 1932.  
 Kaltreider, D. Frank, BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.\*

*Associate Professor*

Ances, Isadore G., BS, University of Maryland, 1956; MD, 1959.  
 Cornbrooks, Ernest I., Jr., BA, St. John's College, 1931; MD, University of Maryland, 1935.\*  
 Durkan, James P., AB, Loyola College, 1955; MD, University of Maryland, 1959.  
 Middleton, Edmund B., MD, University of Maryland, 1949.  
 Munford, Richard S., BA, University of Rochester, 1951; MD, Yale University, 1951.  
 Robinson, J. Courtland, AB, Princeton University, 1949; MD, Columbia University, 1953.  
 VillaSanta, Umberto, MD, University of Padua, Italy, 1950.  
 Wilson, Fitzpatrick, BS, The City College, New York, 1953; MD, SUNY, Downstate Medical Center, 1957.\*

*Assistant Professor*

Barnett, Robert M., BS, College of Charleston, 1951; MD, University of Maryland, 1955.\*  
 Diggs, Everett S., BS, University of Maryland, 1934; MD, 1937.\*  
 Dubin, Norman, BA, University of Rochester, 1963; PhD, Rutgers University, 1970.  
 Dumler, John C., BS, University of Maryland, 1934; MD, 1937.\*  
 Granados, Juan, MD, University of Madrid, 1966.  
 Kardash, Theodore, BS, University of Maryland, 1938; MD, 1942.\*  
 Moszkowski, Erica F., BS, Liceo Nacional de Senoritas NI, 1946; MD, University of Buenos Aires, Argentina, 1954.  
 Mould, Leslie L., MD, Queen's University, Ontario, 1952.  
 Schwartz, Benson C., MD, University of Maryland, 1948.\*

*Instructor*

Kho, Ronald L. S., MD, University of Indonesia, 1963.\*  
 Randall, Louis L., BS, Morgan State College, 1953; MD, University of Maryland, 1957.\*

*Associate*

Buyalos, Richard P., BS, Marshall University, 1960; MD, Jefferson Medical College, 1964.\*  
 Canning, Patrick J., MD, National University of Ireland, 1968.  
 Levin, Norman, MD, University of Maryland, 1947.\*

*Emeritus*

Davis, George H., BS, Washington College, 1932; MD, University of Maryland, 1936.  
 Reese, John M., MD, University of Maryland, 1920.  
 Siegel, Isadore A., AB, Johns Hopkins University, 1919; MD, 1923.

**OPHTHALMOLOGY***Professor*

Richards, Richard R., chairman; AB, University of Michigan, 1948; MD, 1951; MSc, State University of Iowa, 1957.  
 Fox, Samuel L., BS, University of Maryland, 1936; MD, 1938.\*  
 Schocket, Stanley S., BS, University of Maryland, 1955; MD, 1959.

*Assistant Professor*

Braver, David A., BS, Ohio State University, 1957; MD, University of Maryland, 1963.\*  
 Creamer, John J., BS, University of Maryland, 1950; BS (pharmacy), 1953; MD, New York Medical College, 1960.\*  
 Feinberg, Gilbert N., BS, Johns Hopkins University, 1955; MD, University of Maryland, 1959.\*  
 Goldberg, Julian R., AB, Johns Hopkins University, 1952; MD, University of Maryland, 1955.\*  
 Hameroff, Stephen B., BS, University of Maryland, 1962; MD, 1966.\*  
 Jones, Thomas C., BS, Florida A&M University, 1942; MD, Meharry Medical College, 1945.\*  
 Katzen, Leeds E., BS, University of Maryland, 1958; MD, 1964.\*  
 Ross, Jerome, BS, University of Maryland, 1957; MD, 1960.\*



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- Brull, Stanley, BS, Loyola College, 1964; MD, University of Maryland, 1969.\*  
 Ehrlich, Gary L., BS, Dickinson College, 1961; MD, University of Maryland, 1965.\*  
 Kasper, Robert L., BS, University of Miami, 1960; MD, 1963.\*  
 Kaur, Surinder, BA, Punjab University, India, 1957; MD, 1963.\*  
 Kohlhepp, Paul A., BS, Loyola College, 1958; MD, University of Maryland, 1962.\*  
 Kolker, Richard J., BS, University of Pennsylvania, 1965; MD, University of Maryland, 1970.\*  
 Kronthal, Alfred, BS, Loyola College, 1957; MD, University of Maryland, 1961.\*  
 Leffler, Martha B., BS, Iowa State University, 1962; MD, Johns Hopkins University, 1966.\*  
 O'Rourke, Thomas R., Jr., BS, University of Maryland, 1957; MD, 1962.\*  
 Silver, Allen E., BA, Wayne State University, 1959; MD, 1963.\*  
 Susel, Richard N., BS, University of Maryland, 1962; MD, 1966.\*  
 Weiner, Barry M., AA, Baltimore Junior College, 1963; BS, Pennsylvania College of Optometry, 1965; OD, 1967.

*Associate*

- Tittel, Paul, BS, Johns Hopkins University, 1957.

**PATHOLOGY***Professor*

- Trump, Benjamin F., chairman; BA, University of Missouri, 1953; MD, University of Kansas, 1957.  
 Bulger, Ruth E., AB, Vassar College, 1958; AM, Radcliffe College, 1959; PhD, University of Washington, 1962.\*  
 Firminger, Harlan I., AB, Washington University, 1939; MD, 1943.  
 Fisher, Russell S., forensic pathology; BS, Georgia School of Technology, 1937; MD, Medical College of Virginia, 1942.\*  
 Garcia, Julio H., BS, National College of St. Bartholomew, Bogota, 1951; MD, National University of Colombia, 1958.  
 Iseri, Oscar A., BS, Antioch College, 1952; MD, Harvard University, 1956.  
 Middlebrook, Gardner, AB, Harvard College, 1938; MD, 1944.  
 Rasmussen, Peter, MD, Temple University, 1952.  
 Sandbank, Uriel, MD, University of Geneva, 1955.  
 Tigertt, William D., MD, Baylor University, 1937; AB, 1938.  
 Wood, Colin, anatomical pathology; MB, ChB, Birmingham University, 1946; MD, 1957.

*Associate Professor*

- Knoblock, Edward C., clinical chemistry; AB, Western State College of Colorado, 1942; MS, University of Maryland, 1959.  
 Masters, Jason M., head, Department of Medical Technology; BA, High Point College, 1951; MA, Sul Ross State College, 1956; PhD, University of Maryland, 1965.  
 Mergner, Wolfgang, MD, Justus Liebig University, Giessen, Germany, 1961.  
 Nagle, Raymond, BS, Washington State University, 1960; MD, University of Washington, 1964.  
 Oster, Walter F., BS (pharmacy), University of Maryland, 1956; MD, 1961.\*  
 Saladino, Andrew J., BS, Georgetown University, 1960; MD, 1964.\*  
 Smith, Andrew G., BS, Pennsylvania State College, 1940; MS, University of Pennsylvania, 1947; PhD, 1950.  
 Toll, M. Wilson, MSc, McGill University, 1935; MD, 1940.\*

*Assistant Professor*

- Adams, John E., BS, University of Maryland, 1954; MD, 1956.\*  
 Anthony, Ronald L., BA, Susquehanna University, 1961; PhD, University of Kansas, 1965.  
 Aronson, Roland S., BS, University of Vermont, 1928; MD, 1931.\*  
 Arstilla, Antti U., MD, University of Turku, Finland, 1965.\*  
 Bhagavan, Belur S., MBBS, R. G. Kar Medical College, Calcutta, 1958.\*  
 Brown, Charles, AB, Princeton University, 1954; MD, University of Pennsylvania, 1958.\*  
 Caplan, Yale H., BS, University of Maryland, 1963; PhD, 1968.\*  
 Cartwright, Willie Q., MS, New York University, 1971.  
 Dawson, R. Ben, AB, BS, Hampden-Sydney College, 1958; MD, University of Virginia, 1963.  
 Dhar, Jyotsna K., BS, Calcutta University, 1956; MD, Nilratan Sircar Medical College, 1962.\*  
 Fazekas, Victor A., MD, George Washington University, 1960.\*  
 Frost, James L., AB, Princeton University, 1953; MD, Johns Hopkins University, 1957.

- Griggs, E. Allen, BA, Virginia Military Institute, 1964; MD, University of Virginia, 1968.\*
- Guerin, Paul F., forensic pathology; AB, Wittenburg College, 1942; MD, University of Pennsylvania, 1945.\*
- Jiji, Rouben M., MD, Royal College of Medicine, Baghdad, Iraq, 1950.
- Jiji, Violet, MD, Royal College of Baghdad, 1950.\*
- Kahng, Myong W., BS, Seoul National University, 1957; MS, University of Maryland, 1962; PhD, 1967.
- Kim, Kook M., MD, Seoul National University, 1960.
- Kime, Watson P., BSc, University of Wales, 1950; MB, BCH, Welsh National School of Medicine, 1953.\*
- King, Walter B., Jr., AB, University of California, 1948; MD, Stanford University, 1954.\*
- Laiho, Kauno U., MD, University of Helsinki, 1967.\*
- Lancaster, Robert G., BS, Gonzaga University, 1952; MD, University of Maryland, 1955.\*
- Ling, Virginia, MD, University of Madrid, University of Zaragoza, Spain, 1961.\*
- McDowell, Elisabeth M., BVet Med., Royal Veterinary College, University of London, 1964; BA, University of Cambridge, 1968; PhD, 1971.
- Nipper, Henry, AB, Emory University, 1960; MS, Purdue University, 1966; PhD, University of Maryland, 1971.
- Passen, Selvin, BS, University of Maryland, 1957; MD, 1960.\*
- Petrucchi, John, BS, Fordham University, 1952; MD, University of Geneva, 1957.\*
- Pyeatte, Joella C., BS, University of Oklahoma, 1950; MD, 1954.
- Rodrigues, Ferdinand C., MD, University of Philippines, 1965.
- Sheehan, John, AB, Seton Hall, 1961; MD, New Jersey College of Medicine, 1965.\*
- Sherrer, Edward L., Jr., BS, Bowling Green State University, 1952; MSc, Ohio State University, 1953; MD, 1958.\*
- Shin, Moon L., MD, Soo Do Medical College, Seoul, Korea, 1962.
- Sutherland, John C., AB, Northwest Nazarene College, 1941; MD, Marquette, 1946.
- Taylor, James E., BS, University of Maryland, 1956; MD, 1958.\*
- Tiamson, Esperanza, MD, University of Santo Tomas, 1954.\*
- Tyson, Greta, BS, State College at Bridgewater, Massachusetts, 1955; MS, University of New Hampshire, 1957; PhD, University of California, 1967.
- Valigorsky, Jon M., BS, University of Maryland, 1963; MD, 1968.
- Wenk, Robert E., BA, New York University, 1959; MD, University of Louisville, 1963.\*
- Wilde, Kenneth, BA, Kutztown State College, 1965; MS, University of Maryland, 1969; PhD, 1974.

#### *Instructor*

- Baker, David C., BS, Kansas State University, 1968; MS, University of Missouri, 1974.
- Barrett, Lucinda, BA, University of Connecticut, 1963; MA, University of Kansas, 1966.
- Billings, David A., BS, University of Maryland, 1972.
- Chang, Seung-Han, BS, Kyung Hec University, Seoul, 1963; MS, 1969.
- Duncan, Craig E., BS, University of Washington, 1965; MD, 1969.\*
- Goldman, Glenda, BS, University of Maryland, 1971; MS, 1974.
- Gonzalez, Karen M., BS, University of Maryland, 1971.
- Hill, Elizabeth, BS, Temple University Medical School and Hospital.
- Hinton, David, BS, Mississippi College, 1965; MS, University of Mississippi, 1967; PhD, 1969.
- Jones, Raymond, BS, Old Dominion University, 1968; MS, University of Delaware, 1970; PhD, University of Maryland, 1974.
- Krause, George W., AA, Baltimore Junior College, 1967; BS, University of Maryland, 1969; MT (ASCP), Union Memorial Hospital School of Medical Technology, 1971; MS, University of Maryland, 1975.\*
- Reggiardo, Zulema R., BS, College National Rosario, Argentina, 1951; PhD, University National of Litoral, Argentina, 1958.
- Shu, Sau Yee A., MB, BS, University of Hong Kong, 1966.

#### *Associate*

- Berezsky, Irene K., BA, Boston University, 1958.
- Collan, Yrjo Ui, MD, Helsinki University, 1968.
- Dees, Jane, AB, University of North Carolina, 1962.\*
- Heatfield, Barry M., BA, University of California, Santa Barbara, 1962; PhD, University of California, Los Angeles, 1969.
- Kaiser, Hans E., BS, University of Rostock, Germany, 1948; PhD, Eberhard-Karls University, Tuebingen, Germany, 1958.

Miller, Stanley, BA, University of Pennsylvania, 1939; MD, Jefferson Medical College, 1943.\*  
 Peddicord, Charles H., BS, University of Maryland, 1969; MS, Catholic University of America, 1971; PhD, 1974.  
 Pendergrass, Robert, University of North Carolina.  
 Rundell, Clark A., BS, St. Cloud State College, 1960; MS, University of North Dakota, 1962; PhD, 1965.  
 Sato, Toshihide, MD, Nagoya City University, 1968.  
 Smith, Mary, BA, West Virginia University, 1961; MS, 1963.  
 Weavers, Barry A., Paddington Technical College, 1965.

## PEDIATRICS

### *Professor*

Cornblath, Marvin, chairman; MD, Washington University, St. Louis, 1947.  
 Clemmens, Raymond L., BS, Loyola College, 1947; MD, University of Maryland, 1951.  
 Finkelstein, Abraham H., MD, University of Maryland, 1927.\*  
 Heald, Felix P., AB, Colorado College, 1943; MD, University of Pennsylvania, 1946.  
 Hepner, Walter, BS, University of Chicago, 1941; MD, 1944.  
 Kaplan, Eugene, BA, Dartmouth College, 1933; MD, New York University, 1937.\*  
 Kappelman, Murray, director of medical education; BS, University of Maryland, 1951; MD, 1955.  
 Lentz, George A., Jr., AB, Johns Hopkins University, 1953; MD, University of Maryland, 1957.  
 Lesser, Arthur J., BA, Amherst College, 1930; MD, Washington University, 1934; MPH, Harvard University, 1941.\*  
 Ozand, Pinar, BS, Yenisehir Maaril College, 1950; MD, Ankara University Medical School, 1956.  
 Rosemberg, Eugenia, MD, University of Buenos Aires, 1944.\*  
 Schaffer, Alexander J., AB, Johns Hopkins University, 1920; MD, 1923.\*  
 Tildon, James Tyson, BS, Morgan State College, 1954; PhD, Johns Hopkins University, 1965.  
 Walker, Stuart H., AB, Middlebury College, 1942; MD, New York University, 1945.  
 Weaver, Karl H., AB, West Virginia University, 1950; MD, University of Maryland, 1953.

### *Associate Professor*

Baldwin, Ruth, BS, University of Maryland, 1942; MD, 1943.  
 Balis, Sophia, DDS, University of Athens, 1957; DDS, University of Toronto, 1966.\*  
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 Davens, Edward, AB, Stanford University, 1932; MD, 1938.\*  
 Gorten, Martin K., BA, Western Maryland College, 1943; MD, University of Maryland, 1949.\*  
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 Gutberlet, Ronald L., AB, Washington and Lee University, 1956, MD, University of Maryland, 1961.  
 Hudson, Barbara W., AB, Cornell University, 1949; RN, Columbia Presbyterian School of Nursing, 1952; MD, College of Physicians and Surgeons, 1956.\*  
 Irwin, Robert C., AB, Georgetown University, 1953; MD, University of Maryland, 1959.\*  
 Kenny, Thomas J., AB, Washington and Lee University, 1954; MA, Peabody College, 1959.  
 Khan, Misbah, MBBS, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.  
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 Nair, Prasanna, MBBS, University of Delhi, 1956.  
 Quivers, William, BS, Hampton Institute, 1942; MD, Meharry Medical College, 1953.\*  
 Raiti, Salvatore, MBBS, University of Queensland, 1958; MRCP, Glasgow, 1962.  
 Seabold, William M., AB, University of Maryland, 1928; MD, 1931.  
 Schwartz, Allen D., BA, Johns Hopkins University, 1960; MD, University of Maryland 1964.  
 Sila, Ulgan, AB, American Academy for Girls, Turkey; MD, University of Istanbul, Turkey, 1956.\*  
 Stine, Oscar C., BA, Oberlin College, 1954; DrPH, Johns Hopkins University, 1960.

### *Assistant Professor*

Baver, Rudolph, PhD, Catholic University, 1970.  
 Berman, Wulfred, MB, ChB, University of Capetown, 1958; DTM&H, University of Liverpool, 1962.\*  
 Burgan, Paul, BS, University of Maryland, 1956; MD, 1962.\*  
 Caplan, Lester H., AB, Johns Hopkins University, 1936; MD, University of Maryland, 1940.\*



- Chabon, Robert, BS, George Washington University, 1959; MD, Georgetown University, 1963.\*
- Dawson, Robert, BS, University of Maryland, 1956; MD, 1959.\*
- Fleming, Gary, BS, Franklin and Marshall College, 1957; MD, University of Maryland, 1966.\*
- Fox, Mary Alice, AB, Women's College, University of North Carolina, 1944; MD, University of Pennsylvania, 1948.\*
- Furth, Mary L., BS, University of Maryland, 1953; MD, 1957.\*
- Gumbinas, Marie, BA, University of Chicago, 1963; MD, 1966.
- Holcomb, Thomas, MD, University of Mermont, 1947.\*
- Huang, Shih-Wen, MD, National Taiwan University, 1962.
- Jensen, Philip J., AB, University of Virginia, 1947; MD, Johns Hopkins University, 1952; MSc, University of Pennsylvania, 1960.
- Kaiser, Theodore H., MD, Johns Hopkins University, 1949.\*
- Khan, Mushtaq, BS, College of Animal Husbandry, Lahore, 1960; MS, Montana State University, 1962; PhD, Washington State University, 1968.
- Koppanyi, Zsolt H. B., Bachiller, Colegio Nacional, Argentina, 1959; Doctor en Medicina, 1961.\*
- Lavy, Richard C., BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.\*
- Luddy, Ruth E., BA, Notre Dame of Maryland, 1960; MD, University of Maryland, 1964.
- Maclaren, Noel K., MB, ChB, Otago Medical School, N. Z., 1963; MRACP, 1967; DCH, Institute of Child Health, London, 1970; FRACP, Australian College of Physicians, 1973.\*
- Malcotti, Marvin M., BA, Franklin and Marshall College, 1961; MA, University of Toronto, 1963; PhD, 1968.\*
- Mosser, Robert S., BS, University of Maryland, 1949; MD, 1951.
- Mullan, Paul A., MD, University of Maryland, 1957.\*
- Norton, Clayton, AB, Johns Hopkins University, 1949; MD, 1953.\*
- O'Mansky, Boris, MD, Duke University, 1957.\*
- Randol, Charles L., AB, Harvard College, 1938; MD, Johns Hopkins University, 1943.\*
- Reilly, Charles M., AB, Swarthmore College, 1951; MD, University of Pennsylvania, 1955.\*
- Rinaldi, Robert T., AB, St. Michael's College, 1963; MA, Fairfield University, 1966; MEd, University of New Hampshire, 1968.\*
- Robinson, Sherman S., BS, Davis and Elkins College, 1953; MD, Georgetown University, 1957.\*
- Ruley, Edward J., BS, The Citadel, Charleston, South Carolina, 1960; MD, University of Maryland, 1964.
- Saadat, Mahoochehr, MD, University of Tehran College and Medical School, 1961.\*
- Schiffman, Gilbert B., AB, George Washington University; OD and BS, North Illinois College of Optometry; MEd, Temple University; DEd, University of Maryland.\*
- Sigman, Bernice, MD, University of Maryland, 1960; MS, Washington University, 1966.
- Standiford, Willard, AB, Johns Hopkins University, 1956; MD, University of Maryland, 1960.\*
- Vance, Arnold, BS, University of Maryland, 1950; MD, 1953.\*
- Wald, Ellen R., BS, Brooklyn College, 1964; MD, SUNY, Downstate, 1968.
- Wasserman, Martin, BA, Williams College, 1964; MD, Johns Hopkins University, 1968.
- White, Benjamin, BA, Furman University, 1941; MD, Medical College of Georgia, 1946.\*
- Wolfe, Herbert J., BS, University of Pittsburgh, 1948; MEd, 1952.\*
- Zielke, Horst R., BS, University of Illinois, 1964; PhD, Michigan State University, 1968.\*

#### *Instructor*

- Ahluwalia, Kulawant S., LRCP, MhCS, Royal College of Physicians and Surgeons, 1965.
- Ashman, Ruth S., BA, Barnard College, 1965; MD, New York University, 1969.\*
- Bernstein, Leroy, BA, University of Colorado, 1959; MD, George Washington University, 1968.\*
- Chang, Albert, AB, Harvard University, 1963; MD, University of Rochester, 1968; MPH, University of California at Berkeley, 1972.\*
- Cosby, Marilyn K., AB, Indiana University, 1965; DDS, 1971; Certification in Pedodontics, Ohio State Dental College, 1973.\*
- Fortier, Dwight, BA, University of Maryland, 1962; MD, 1966.\*
- Francis, Earlie, BS, Howard University, 1960; MD, University of Maryland, 1964.\*
- Gordon, Albert, BS, University of Maryland, 1960; MD, 1964.\*
- Green, Karl M., BS, University of Maryland, 1955; MD, 1959.\*
- Guarnieri, Susan R., BS, St. Mary of the Springs College, 1963; MD, Ohio State University, 1966; MPH, Johns Hopkins University, 1969.\*
- Hayes, Alice, AB, University of Maryland, 1959; MD, 1963.\*
- Hilger, Thelma, BA, State University of Iowa, 1950; MS, University of Pittsburgh, 1952.

- Howard, Lenore W., medical psychology; AB, University of Connecticut, 1957; MA, University of New Hampshire, 1959.
- Katkov, Eric A., BA, University of Virginia, 1965; DDS, University of Maryland, 1970.\*
- Katz, Morton I., BS, University of Maryland, 1963; DDS, 1965.\*
- Kaufman, Felix L., BA, Franklin and Marshall College, 1965; MD, University of Maryland, 1969.\*
- Khodabandelou, Mohammad, MD, Pahlavi University, Iran, 1960.\*
- Layton, Richard, BA, University of Richmond, 1965; MD, University of Virginia, 1969.\*
- Lee, Hae, MD, Soo Do Medical College of Seoul, Korea, 1961.\*
- Leffler, Allan, BS, Iowa State, 1962; MD, Johns Hopkins University, 1966.\*
- Murakoshi, Kozo, MD, Okayama University Medical School, 1968.\*
- O'Donovan, John, BA, Yale University, 1961; MD, Johns Hopkins University, 1965.\*
- Padousis, Robert, BS, University of Maryland, 1961; DDS, 1964.\*
- Pal, Bimal, MBBS, University of Calcutta, 1959; DCH, Royal College of Physicians in Glasgow, 1963; MRCP, 1967; MD, FLEX, Maryland, 1971.
- Rector, Joanne C., BA, Vanderbilt University, 1955; MSW, Smith College, 1963; ACSW, CSW, New York State, 1967; PhD, Colorado State Christian College, 1973.
- Rosenstein, Alfred B., AB, Western Maryland College, 1961; MD, University of Maryland, 1965.\*
- Ruff, Elizabeth, MB, ChB, University of Aberdeen, Scotland, 1968.\*
- Said, Dhia, MB, ChB, Baghdad University, 1956.\*
- Santos, Arturo, AA, University of Philippines College, 1963; MD, 1967.\*
- Trias, Estrellita, MD, University of the Philippines, 1965.\*
- Vorasubin, Yupadd, MD, Mahidol University, Thailand, 1967.
- Wolff, Theodore, MD, Jefferson Medical College, 1966.\*

#### *Associate*

- Wehman, Henry, BS, Spring Hill College, 1963; PhD, Johns Hopkins University, 1969.\*

#### *Emeritus*

- Bradley, J. Edmund, BS, Loyola College, 1928; MD, Georgetown University, 1932.
- Glick, Samuel S., BA, Johns Hopkins University, 1920; MD, University of Maryland, 1925.

## **PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS**

#### *Professor*

- Albuquerque, Edson X., chairman; BS, Salesiano College, Recife, 1953; MD, University of Recife, College of Medicine, 1959; PhD, Ribeirao Preto, Brazil, 1962.
- Aposhian, H. Vasken, BS, Brown University, 1948; MS, University of Rochester, 1950; PhD, 1953.
- Ludlum, David B., BA, Cornell University, 1951; PhD, University of Wisconsin, 1954; MD, New York University, 1962.

#### *Associate Professor*

- Byron, Joseph W., BS, Fordham University, 1952; MS, Philadelphia College of Pharmacy and Science, 1955; PhD, University of Buffalo, 1959.
- Kauffman, Frederick, BA, Knox College, 1958; PhD, University of Illinois, 1965.

#### *Assistant Professor*

- Brookes, Neville, MPS, Bath University, 1962; PhD, Leeds University Medical School, 1967.
- Dolly, James O., BS, National University of Ireland, 1966; MS, 1968; PhD, University College, Cardiff, U.K., 1972.
- Rash, John E., BA, University of Texas, 1965; MA, 1967; PhD, 1969.
- Warnick, Jordan E., BS, Massachusetts College of Pharmacy, 1963; PhD, Purdue University, 1968.
- Weinreich, Daniel, BS, Bethany College, 1964; PhD, University of Utah, 1970.

#### *Associate*

- Deshpande, Sharad S., B. Pharm., College of Pharmacy, Gujarat University, 1954; MS, School of Pharmacy, University of Southern California, 1958; PhD, School of Pharmacy, University of Florida, 1965.
- Lebeda, Frank J., BS, University of Illinois, 1969; PhD, University of New York at Buffalo, 1974.

- Mehta, Jitendra R., BSc, University of Bombay, 1968; MA, University of Scranton, 1972; PhD, St. John's University, 1974.  
 Murphy, Michael J., BS, Clarkson College of Technology, 1969; PhD, Virginia Commonwealth University, 1974.  
 Tong, William P., AB, Ripon College, 1970; PhD, University of Maryland, 1974.

#### *Emeritus*

- Krantz, John C., Jr., BS, University of Maryland, 1923; MS, 1924; PhD, 1928.

### **PHYSIOLOGY**

#### *Professor*

- Blake, William D., chairman; AB, Dartmouth College, 1940; MD, Harvard Medical School, 1943.  
 Barraclough, Charles A., BS, St. Joseph's College, 1949; MS, Rutgers University, 1952; PhD, 1953.  
 Fajer, Abram B., MD, University of Sao Paulo, 1951.  
 Glaser, Edmund M., BEE, The Cooper Union, 1949; MSE, Johns Hopkins University, 1954; DEng, 1960.  
 Mason, G. Robert, BA, Oberlin College, 1955; MD, University of Chicago, 1957; PhD, Stanford University, 1968.\*  
 Pinter, Gabriel G., MD, University Medical School, Budapest, 1951.

#### *Associate Professor*

- Channing, Cornelia P., BA, Hood College, 1961; MA, Harvard University, 1963; PhD, 1965; ScD (honorary), Hood College, 1972.  
 Goldman, Lawrence, BS, Tufts University, 1958; PhD, University of California at Los Angeles, 1964.  
 Greisman, Sheldon E., MD, New York University, 1949.\*  
 Karpeles, Leo M., BS, University of North Carolina, 1941; MD, University of Washington, 1955.  
 Ruchkin, Daniel S., BE, Yale University, 1956; ME, 1957; DEng, 1960.

#### *Assistant Professor*

- Abzug, Charles, SB, Massachusetts Institute of Technology, 1964; MS, New York Medical College, 1967; PhD, 1971.  
 Blaumanis, Otis R., BA, Johns Hopkins University, 1965; PhD, 1970.  
 Cramer, Oneida, BS, University of Maryland, 1967; PhD, 1971.  
 Horn, Lyle W., BS, University of Colorado, 1966; PhD, Johns Hopkins University, 1973.  
 Jurf, Amin N., BA, Western Maryland College, 1959; PhD, University of Maryland, 1966.\*  
 Turgeon, Judith L., BA, Washburn University, 1965; PhD, University of Kansas, 1969.  
 Urbaitis, Barbara K., BA, Hunter College, 1960; MA, 1965; PhD, Cornell University, 1968.

#### *Associate*

- Tsafriri, Alexander, BSC, Tel Aviv University, 1965; MSC, 1967; PhD, Weizmann Institute of Science, 1973.

### **PSYCHIATRY**

#### *Professor*

- Brody, Eugene B., chairman; Director, Institute of Psychiatry and Human Behavior; AB, MA, University of Missouri, 1941; MD, Harvard Medical School, 1944.  
 Balis, George, MD, National University of Athens, 1954.  
 Bartemeier, Leo, BA, Catholic University of America, 1914; MA, 1916; MD, Georgetown Medical school, 1920.\*  
 Friedman, Stanford, psychiatry and human development; Director, division of Child and Adolescent Psychiatry; BA, Antioch College, 1953; MD, University of Rochester, 1957.  
 Gantt, Horsley, BS, University of North Carolina, 1917; MD, University of Virginia, 1920.\*  
 Grenell, Robert G., neurobiology; BS, College of the City of New York, 1935; MS, New York University, 1936; PhD, University of Minnesota, 1943.  
 Huffer, Virginia, BS, University of Maryland, 1940; MD, 1950.  
 Monroe, Russell, BS, Yale University, 1942; MD, 1944.  
 Savage, Charles, BA, Yale University, 1939; MS, University of Chicago, 1943; MD, 1945.\*



Schnaper, Nathan, BS, Washington College, 1940; MD, University of Maryland, 1949.\*  
 Siegman, Aron W., psychology; BA, City College of New York, 1952; University of Wisconsin, 1954; PhD, Columbia University, 1957.\*  
 Weintraub, Walter, BA, New York University, 1948; MD, University of Geneva, 1951.

#### *Associate Professor*

Ascher, Eduard, BS, Washington University, 1942; MD, 1942.\*  
 David, Henry P., psychology; BA, University of Cincinnati, 1948; MA, 1949; PhD, Columbia University, 1951.\*  
 Donner, Lawrence, clinical psychology; BA, Rutgers University, 1962; MS, 1965; PhD, 1967.  
 Gibson, Robert Q., MD, University of Pennsylvania, 1948.\*  
 Glaser, Kurt R., MD, University of Lausanne, 1939; MSc (pediatrics), University of Illinois, 1948.\*  
 Gray, Sheila Hafter, BA, Brooklyn College, 1950; MA, New School of Social Research, 1954; MD, Harvard Medical School, 1958.\*  
 Gross, Herbert S., BA, Yeshiva College, 1956; MD, Albert Einstein College of Medicine, 1960.  
 Hunt, Gerard, sociology; BS, Fordham University, 1959; MA, Emory University, 1962; PhD, University of North Carolina, 1969.  
 Kamback, Marvin C., BA, University of South Dakota, 1961; MD, 1962; PhD, Vanderbilt University, 1965.  
 Kohlmeyer, Werner A., MD, University of Goettingen, Germany, 1945.\*  
 Lion, John R., AB, Harvard University, 1960; MD, Albany Medical College of Union University, 1965.  
 Lynch, James J., psychology; BS, Boston College, 1962; MA, Catholic University, 1964; PhD, 1965.  
 Mackie, James B., clinical psychology; BA, University of Utah, 1955; MA, 1957; PhD, 1963.  
 Modaresi, Taghi M., MD, University of Tehran, 1959.  
 Newman, Ruth G., psychology; BA, Rutgers University, 1937; MA, George Washington University, 1952; PhD, University of Maryland, 1958.\*  
 Pepper, Bertram, BA, City College of New York, 1953; MS, Columbia University, 1954; MD, New York University, 1957.\*  
 Rappeport, Jonas R., BS, University of Maryland, 1948; MD, 1952.\*  
 Roseman, Morris, clinical psychology; BS, University of Maryland, 1942; BA, 1943; PhD, Duke University, 1949.\*  
 Sakles, Constantine J., AB, University of Rochester, 1955; MD, Yale University, 1959.  
 Scratton, Joan M., psychiatric social work; BA, University of Melbourne, 1963; MSW, Smith College of Social Work, 1965.  
 Stierlin, Helm, PhD, University of Heidelberg, 1951; MD, 1953.\*  
 Styrt, Jerome, BS, University of Chicago, 1940; MD, 1945.\*  
 Wurmser, Leon, MD, University of Zurich, 1955.

#### *Assistant Professor*

Albright, Mary J., clinical psychology; BA, St. Mary of the Springs College, 1954; MA, Fordham University, 1956; PhD, 1966.  
 Arana, Jose, MD, Universidad Peruana Cayetano Heredia, 1967.  
 Armstrong, Judith, psychology; BA, Brooklyn College, 1962; PhD, University of California, 1968.\*  
 Ault, Virginia, RN, Union Memorial Hospital, 1945; BS, University of Maryland, 1950; MD, University of Vermont, 1959.  
 Azcarate, Carlos, MD, Universidad Peruana Cayetano Heredia, 1968.  
 Bacher, Norman M., BS, University of Maryland, 1949; MD, Chicago Medical School, 1954.\*  
 Barcik, David J., psychology; BS, Western Michigan University, 1960; MA, 1961; PhD, University of Delaware, 1969.\*  
 Barry, Ronald M., MD, Melbourne University, 1963.\*  
 Beran, Bohumil, MD, Charles University in Prague, Czechoslovakia, 1964.\*  
 Boslow, Harold, MD, University of Virginia, 1939.\*  
 Bosma, Willem G. A., MD, University of Amsterdam, 1950.  
 Bradford, Norman H., clinical psychology; BA, University of Minnesota, 1956; PhD, 1964.  
 Brown, George P., BS, Howard University, 1940; MD, 1944.\*  
 Carney, Francis L., psychology; AB, Clark University, 1954; MA, American University, 1962; PhD, Catholic University, 1967.\*  
 Chaiklin, Harris, psychiatric social work; BA, University of Connecticut, 1950; MSW, University of Wisconsin, 1953; PhD, Yale University, 1961.\*

- Cohen, George, BS, University of Pittsburgh, 1956; MS, 1963.
- Cohen, Irvin H., BA, Johns Hopkins University, 1944; MD, University of Maryland, 1947.\*
- Davis, Nathan, BA, University of Chicago, 1950; MD, 1957.\*
- Dixon, William R., AB, Princeton University, 1940; MD, Johns Hopkins University, 1944.\*
- Dubin, Samuel, BA, Washington Square College, 1950; MD, Faculty of Medicine, University of Leiden, the Netherlands, 1957.\*
- Fiedler, Kurt R., University of Berlin, 1949; MD, 1953.\*
- Fitzpatrick, William W., BS, Mercer University, 1941; MD, Emory University, 1944.\*
- Gallahorn, George E., BS, Georgetown University, 1962; MD, University of Maryland, 1966.
- Godenne, Ghislaine D., child psychiatry; BS, University of Louvain, Belgium, 1948; MD, 1952.\*
- Gordon, Bernard S., AB, University of Michigan, 1937; MD, University of Louisville, 1942.\*
- Herts, John B., BA, Rutgers University, 1961; MD, Georgetown University, 1966.\*
- Holden, William, BS, Marquette University, 1948; MD, 1952.\*
- Hulfish, Barbara, neurology; BA, American University, 1944; MD, University of Rochester, 1952.\*
- Jantz, Eleanor M., clinical psychology; BA, Northwestern University, 1953; MA, 1957; PhD, 1959.
- Jencks, Stephen F., AB, Harvard University, 1962; MD, 1967.\*
- Johnston, Daniel F., AB, Princeton University, 1952; MD, University of Maryland, 1956.\*
- Jones, Norma, psychiatric social work; AB, Morgan State College, 1957; MSW, Howard University, 1965.
- Lasson, Morris L., psychology; BA, Ner Israel College, 1960; MA, Loyola College, 1962; PhD, Catholic University, 1965.\*
- Laucks, Stanley P., psychology; BS, Ursinus College, 1943; MD, University of Pennsylvania, 1946.\*
- Leichtman, Sandra R., clinical psychology; BA, University of Michigan, 1966; PhD, University of North Carolina, 1971.
- Lewis, Harvey A., BS, Manhattan College, 1952; MD, Georgetown University, 1956.\*
- Lloyd, Dee, psychology; BA, University of Utah, 1956; MA, 1958; PhD, Ohio State University, 1961.\*
- Long, Eugene S., BS, Wagner College, 1955; MD, George Washington University, 1959.\*
- Lynch, Thomas, MB, BCh, University College of Dublin, Ireland, 1947; DPM, National University of Ireland, 1950.\*
- McDaniel, Ellen, MD, University of Michigan, 1966.
- McDonald, Matthew, psychology; BA, University of Maryland, 1966; MA, 1969; PhD, 1971.\*
- McLaney, Martha, psychiatric social work; BA, Towson State College, 1967; MSW, University of Maryland, 1968.
- Magruder, William W., BS, Mississippi State College, 1942; MD, Duke University, 1944.\*
- Manzanera, Elena I., MS, Columbia University, 1967.
- Maxwell, Anabel, psychiatric social work; AB, University of Maryland, 1933; MSW, University of Pennsylvania, 1938.
- Millan, Carlos, MD, Javeriana University, 1966.
- Mott, Thurman, Jr., BS, Northwestern University, 1950; MD, 1952.
- Mourat, Stephan, AB, West Virginia University, 1941; MD, Jefferson Medical College, 1944.\*
- Nolan, Jay, BA, Sacramento State University, 1961; MA, 1962; PhD (anthropology), 1972.
- Nosphitz, Joseph D., BA, University of Louisville, 1943; MD, 1945.\*
- Nyman, Gary W., AB, Columbia College, 1963; MD, University of Virginia, 1968.\*
- Olsen, Roger, psychology; BA, St. Olaf College, 1962; MA, University of South Dakota, 1963; PhD, Southern Illinois University, 1968.\*
- Olsson, James E., clinical psychology; BS, University of Maryland, 1959; MA, Catholic University, 1967.\*
- Paskewitz, David, psychology; BA, University of Minnesota, 1963; MS, University of Oklahoma, 1965; PhD, 1967.
- Penna, Manoel, premedical, Colegro Estadual Paesde Cavalho Brasil, 1955; MD, University of Para, Brazil, 1961.
- Plaut, S. Michael, psychology; BA, Adolphi University, 1965; PhD, University of Rochester, 1968.
- Press, Leonard, psychiatric social work; BA, Johns Hopkins University, 1952; MSSA, Western Reserve University, 1957.\*
- Rhead, John C., BA, Dartmouth College, 1967; PhD, Stanford University, 1971.\*
- Robinson, Kent E., BA, University of Cincinnati, 1943; MD, 1952.\*
- Robinson, Lisa, RN, University of Maryland, 1959; BSN Ed, American University, 1961; MS, University of Maryland, 1965; PhD, Union Memorial Hospital, 1970.\*

- Romero, Eduardo, MD, Universidad Nacional, Cordoba, Argentina, 1962.
- Sarles, Richard M., BS, Georgetown University, 1957; MD, University of Maryland, 1961.
- Schwartz, Lloyd, clinical psychology; BA, Pennsylvania State University, 1947; MS, 1947; PhD, American University, 1967.\*
- Schweig, Noel, BA, Wesleyan University, 1951; MD, Duke University, 1956.\*
- Shapiro, Solomon, clinical psychology; BS, Towson State College, 1942; MA, Johns Hopkins University, 1948; PhD, University of Maryland, 1952.\*
- Shear, Howard J., psychology; BA, University of Maryland, 1950; MA, University of Texas, 1953; PhD, 1955.\*
- Shochet, Bernard, BS, University of Maryland, 1952; MD, 1954.\*
- Sila, Basra, BS, College of St. Michael, Istanbul, Turkey, 1950; MD, University of Istanbul, 1956.\*
- Sojit, Cloe M., psychology; Licenciada in Psychology, University of Buenos Aires, 1965.\*
- Teplitz, Zelda, BA, University of Chicago, 1938; MD, University of Illinois College of Medicine, 1942.\*
- Turek, Ibrahim, MD, University of Istanbul, 1954.\*
- Ulgar, Ulku, MD, University of Istanbul, 1959.\*
- Veiga, Mariana, MD, Barcelona University, 1945.\*
- Von Mehlen, Lutz, BS, University of Frankfurt, 1954; MD, University of Munich, 1958.\*
- Weinstein, Stanley, psychiatric social work; BA, University of Maryland, 1965; MSW, 1968.
- Weir, Walter, AB, St. Johns College, 1958; MD, University of Maryland, 1964.
- Weisman, Maxwell N., BA, City College of New York, 1930; MA, Columbia University, 1931; MD, University of Amsterdam, 1958.\*

#### *Instructor*

- Anderson, Richard H., BS, University of Delaware, 1961; MD, Temple University, 1966.\*
- Arnold, William H., MD, University of Rochester, 1957.\*
- Bergman, Barbara A., BS, American University, 1967; MD, University of California at San Francisco, 1971.\*
- Bisco, Michael J., AB, Yale University, 1951; MD, Western Reserve University, 1955.\*
- Carver, Patricia N., psychology; AB, Wellesley College, 1955; Cert. Prop., University of Geneva, Switzerland, 1956; MA, Clark University, 1958; PhD, 1961.\*
- Cephas, Barbara, BA, Coppin State College, 1968; MSW, University of Maryland, 1970.
- Coleman, Peter J., BS, Seattle University, 1963; MD, University of Washington, 1967.\*
- Connor, Huell E., Jr., BS, Texas A&M University, 1958; MA, University of Texas, 1960; MD, 1964.\*
- Dvoskin, Philip, BS, University of Maryland, 1962; MD, 1966.\*
- Fetterhoff, L. Ira, BA, Carroll College, 1951; MDIV, Philadelphia Divinity School, 1954; MD, University of Maryland, 1967.\*
- Finn, Rolfe B., MD, ChB, University of Otago, N. Z., 1950; DPM, Conjoint Examining Board of England, 1957.\*
- Flaherty, Lois, BA, Wellesley College, 1963; MD, Duke University, 1968.\*
- Flashman, Alberta, BA, UCLA, 1955; MD, University of Southern California, 1960.\*
- Freedenburg, Daniel, MD, University of Maryland, 1969.
- Freinek, Wilfried R., MD, Innsbruck University, University of Austria, 1953.\*
- Frieman, Robert D., AB, University of California, 1960; MD, 1965.\*
- Genut, Kate L., psychiatric social work; BA, University of Maryland, 1968; MSW, 1970.\*
- Goshen, Charles, BA, Columbia College, 1964; MD, West Virginia University, 1968.\*
- Hamilton, John, BA, Pacific Union College, 1943; MD, Howard University, 1951.\*
- Haran, Judith F., psychiatric social work; BA, University of Maryland, 1969; MSW, 1973.\*
- Harbin, Henry T., BA, University of Virginia, 1968; MD, Medical College of Georgia, 1972.\*
- Harris, Roger, AB, University of Maryland, 1961; MD, 1968.\*
- Holder, William L., AB, Emory University, 1949; MD, University of Maryland, 1953.\*
- Hughes, Carroll W., BA, Wichita State University, 1969; MA, University of Missouri, 1971; PhD, 1973.
- Jolbitado, Deusdedit, AA, University of Santo Tomas, 1951; MD, 1956.\*
- Levy, Stephen, psychology; BA, Johns Hopkins University, 1966; MA (equivalency), 1967.\*
- Logue, Andrew D., BS, Yale University, 1960; MD, Johns Hopkins University, 1964.\*
- Love, Lois, BA, Swarthmore College, 1943; PhD, University of Pennsylvania, 1947; MD, University of Maryland, 1962.\*
- McElroy, Evelyn, psychiatric nursing; BSN, University of Colorado, 1961; MS, University of Maryland, 1966.\*



- Madden, Denis J., BA, St. Benedict's College, 1963; Ordination, St. Mary's School of Theology, 1967; MEd, Teacher's College, Columbia University, 1969; PhD, Notre Dame University, 1973.\*
- Maters, Patricia, psychiatric nursing; SRN, St. Bartholomew's Hospital, London, 1952.\*
- O'Donnell, James J., alcoholism counseling project.\*
- Oppenheimer, Ruth, child therapy; BA, University of London, 1953.\*
- Rabin, Nancy, BA, Oberlin College, 1965; PhD, University of Chicago, 1971.
- Roberts, Randy, clinical psychology; BA, University of Pennsylvania, 1967; MA, University of Maryland, 1970; PhD, 1971.\*
- Salisbury, Thomas A., psychiatric social work; BS, Union College, 1965; MSW, University of Maryland, 1968.\*
- Satterfield, Sharon B., BS, University of Michigan, 1966; MD, 1970.\*
- Schreder, Richard H., psychiatric social work; BA, University of Notre Dame, 1966; MSW, University of Maryland, 1972.
- Schultz, Clarence, MD, Washington University, 1945.\*
- Smith, Boylston, AB, West Virginia University, 1946; MD, University of Maryland, 1952.\*
- Steinbach, Irvin L., clinical psychology; BS, University of Maryland, 1953; MA, George Washington University, 1966.\*
- Trattner, Robert E., DDS, Western Reserve University, 1945; AB, 1947; MD, University of Chicago, 1951.\*
- Vauls, Kersley, BS, Morgan State College, 1958.
- Weinstein, Gerald E., BA, Syracuse University, 1949; MD, 1954.\*
- Weinstock, Joseph S., BA, University of Maryland, 1956; MD, 1965.\*
- Wise, Samuel P., III, MA, Emory University, 1941; MD, Tulane University, 1946.\*

#### *Associate*

- Einberg, Elmar, EE, Netzlars Institute of Technology, Gothenburg, Sweden, 1950; BS, Johns Hopkins University, 1962.
- Glasner, Dorothy, AB, Goucher College, 1932; MLA, Johns Hopkins University, 1967.\*
- Harris, William M., AB, University of West Virginia, 1941; MD, University of Maryland, 1953.\*
- McCullough, Duncan, AB, Princeton University, 1950.

### **RADIOLOGY**

#### *Professor*

- Angell, Franklin L., BS, Virginia Polytechnic Institute, 1941; MD, Medical College of Virginia, 1947.
- Dennis, John M., Dean, School of Medicine; BS, University of Maryland, 1943; MD, 1945.\*

#### *Associate Professor*

- Diaconis, John N., acting chairman; BS, University of Maryland, 1955; MD, 1961.
- Ayella, Robert J., MD, University of Pennsylvania, 1949; MSc (medicine), 1953.
- Bell, James E., BS, Virginia Union University, 1951; MD, Howard University, 1957.\*
- Brace, Kirkland C., BA, State University of Iowa, 1942; MD, University of Illinois College of Medicine, 1945.\*
- Knox, Gaylord, MD, Tulane University, 1951.\*
- Prempre, Thonbliew, MD, Siriraj Medical School, Thailand, 1958; PhD, Johns Hopkins University, 1968.
- Robinson, James E., BS, Utah State Agricultural College, 1947; MA, Washington University, 1949; PhD, 1955.
- Williams, John, BA, University of Virginia, 1956; MD, Medical College of Virginia, 1962.

#### *Assistant Professor*

- Connaughton, Patrick, BS, National University of Ireland, 1964; MD, 1968.
- Crawford, David B., MB, BCH, Queens University, Belfast, Ireland, 1966.
- Dinker, Robert E., BS, University of Maryland, 1958; MD, 1963.\*
- Edelsack, Edgar, MS, University of Southern California, 1949.\*
- Harrison, George, BA, Tufts University, 1965; MS, University of Maryland, 1969; PhD, 1972.
- Hyman, Nathan B., BS, University of Maryland, 1942; MD, 1946.
- Kumpe, David A., AB, Oberlin College, 1963; MD, Harvard University, 1967.
- KusaKull, Anant, BS, Chulalongkorn University, Bangkok, 1954; MD, University of Medical Science and Siriraj Hospital, 1957.

- Martins, Bambino, BS, University of Bombay, 1960; MS, 1962; PhD, University of California, Berkeley, 1971.
- Matthei, Louis, BS, University of Illinois, 1933; MD, 1934; DABR, 1936.
- Nilprabhassorn, Prasan, BS, University of Medical Sciences, Bangkok, 1956; MD, 1960.
- Slawson, Robert, BS, Morningside College, 1958; MD, State University of Iowa College of Medicine, 1962.
- Thomas, William N., MD, University of Virginia, 1942.\*
- Viravathana, Thavinsakd, BS, Chulalongkorn University, Bangkok, 1960; MD, Siriraj Hospital, Mahidol University, Bangkok, 1964.\*
- White, Dennis W., BS, Ohio University, 1958; MD, Johns Hopkins University, 1962.
- Wipfelder, Rosemarie, BS, Massachusetts Institute of Technology, 1965; MS, Harvard University, 1970.\*

#### *Instructor*

- Andelman, Samuel M., BS, Ohio State University, 1960; MD, Chicago Medical School, 1964.
- Bearman, Sheldon B., BA, University of Pennsylvania, 1964; MD, University of Maryland, 1968.
- Campbell, H. James, BS, University of Maryland, 1959; MD, 1963.\*
- Gilmore, Gerald T., BS, University of Iowa, 1964; MD, 1968.
- Sherman, Michael, AB, Duke University, 1963; MD, University of Maryland, 1967.\*
- Silverton, George, BA, Yale University, 1928; MD, University of Maryland, 1932.
- Snyder, Larry A., BS, University of Maryland School of Pharmacy, 1960; MD, 1965.
- Stofberg, Nathan, BS, University of Maryland, 1956; MD, 1960.
- Weiner, Charles I., BA, Gettysburg College, 1966; MD, University of Maryland, 1971.

#### *Associate*

- Kopecky, Walter, BS, Seton Hall University, 1968; PhD, University of Maryland, 1973.\*

### **REHABILITATION MEDICINE**

#### *Professor*

- Richardson, Paul F., chairman; MD, University of Maryland, 1950.
- Cohen, B. Stanley, MD, University of Maryland, 1947.\*

#### *Associate Professor*

- Fleischer, Clara J., MS (pharmacy), University of Prague, 1932; MD, Medical College of Virginia, 1942.\*
- Gessner, John E., BS, Loyola College, 1950; MD, University of Maryland, 1954.
- Goldfine, Lewis J., MBBS (MD), Kings College and Hospital, University of London, 1960; DPhysMed, 1967.
- Raab, Kurt, MD, Medical School of the University of Vienna, 1955.\*
- Schonfield, Jacob, BS, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.

#### *Assistant Professor*

- Balsam, Frederick J., BS, College of the City of New York, 1931; MD, University of Lausanne, Switzerland, 1938.\*
- Duke, C. James, MD, Marquette University, 1955.\*
- Lentz, George A., Jr., AB, Johns Hopkins University, 1953; MD, University of Maryland, 1957.\*
- Reinstein, Leon, BS, University of Maryland, 1964; MD, 1969.
- Urusky, Walter, AB, New York University, 1938; MD, Marquette University, 1942.\*

#### *Instructor*

- Carter, Gordon C., BS, Morgan State College, 1958; MD, Meharry Medical College, 1963.\*
- Felsenthal, Gerald, BA, New York University, 1963; MD, Albany Medical College, 1967.\*
- Grant, Albert, BS, University of Maryland, 1940; MD, 1943.\*
- Huang, Tai-San, MD, Kaohsiung Medical College, Taiwan, 1961; MS, Graduate School of Washington, 1972.\*
- Hendry, Marjorie, BS, University of Minnesota, 1941; MD, Medical College of Pennsylvania, 1953.\*
- Rosen, Norman B., BA, Johns Hopkins University, 1959; MD, University of Maryland, 1963.\*
- Spindler, Henry, AB, Lehigh University, 1964; MD, New York University, 1968.\*
- Weiss, Thomas, psychology; BA, Rutgers University, 1966; MS, North Carolina State, 1969; PhD, 1971.

## SOCIAL AND PREVENTIVE MEDICINE

### *Professor*

- Henderson, Maureen, chairman; MBBS, Durham University, England, 1949; DPH, 1956.  
 Canner, Paul L., BA, University of Minnesota, 1960; MS, 1962; PhD, 1966.  
 Entwisle, George, BS, University of Massachusetts, 1945; MD, Boston University, 1946.  
 Ferencz, Charlotte, BS, McGill University, 1944; MD, 1945; MPH, Johns Hopkins University, 1970.  
 Lamy, Peter P., BSc (pharmacy), Philadelphia College of Pharmacy and Science, 1956; MSc, 1958; PhD, 1964.\*  
 Klimt, Christian P., MD, University of Vienna, 1944; MPH, Johns Hopkins University, 1952; DrPH, 1959.  
 Knatterud, Genell L., BA, Macalester College, 1952; MS, University of Minnesota, 1959; PhD, 1963.  
 Meinert, Curtis L., BS, University of Minnesota, 1956; MS, 1959; PhD, 1964.  
 Sorkin, Alan L., BA, Johns Hopkins University, 1963; MA, 1964; PhD, 1966.\*  
 Spicer, William S., director, ambulant medical services; MD, University of Kansas, 1949.  
 Tayback, Matthew, AB, Harvard University, 1939; MA, Columbia University, 1940; ScD, Johns Hopkins University, 1953.\*

### *Associate Professor*

- Apostolides, Artistide Y., DVM, National Veterinary School of Toulouse, France, 1963; PhD, University of North Carolina, 1970.  
 Barrett, Harle V., BS, Oklahoma A&M College, 1940; MS, Kansas State College, 1942; MD, University of Kansas, 1946; MPH, Harvard University, 1950.  
 Berman, Joseph, BA, Clark University, 1957; MD, Tufts University, 1961; MPH, Johns Hopkins University, 1968.\*  
 Chan, Yick-Kwong, BS, Taiwan Provincial College of Agriculture, 1955; MS, University of Minnesota, 1960; PhD, 1966.\*  
 Go, Howard T., PhD, University of Technology, Delft, The Netherlands, 1958.\*  
 Hebel, John R., BS, Virginia Polytechnic Institute, 1962; PhD, 1965.  
 Kessler, Irving J., AB, New York University, 1952; MA, Harvard University, 1955; MD, Stanford University, 1960; MPH, Columbia University, 1952; DrPH, Harvard University, 1968.\*  
 Krol, William F., BS, University of Chicago, 1958; MS, 1964; PhD, Johns Hopkins University, 1968.  
 McDill, Mary S., BS, University of Alabama, 1956; PhD, Johns Hopkins University, 1970.  
 Matanoski, Genevieve M., BA, Radcliffe College, 1950; MD, Johns Hopkins University, 1955; MPH, 1962; DrPH, 1964.\*  
 Morton, Richard F., BSc, University of London, 1943; MBBS, University of London, Middlesex Hospital, 1953; MPH, UCLA, 1970.  
 Sherwin, Roger W., BA, Cambridge University, 1953; MA, 1958; MB, BChir, 1958.  
 Stolley, Paul D., BA, Lafayette College, 1957; MD, Cornell University, 1962; MPH, Johns Hopkins University, 1968.\*  
 Warbasse, James R., BA, Princeton University, 1948; MD, Harvard Medical School, 1954.\*  
 White, Benjamin D., BA, Furman University, 1941; MD, Medical College of Georgia, 1946; MPH, Johns Hopkins University, 1959.\*

### *Assistant Professor*

- Bond, Oliver B., MB ChB, Otago University Medical School, N.Z., 1953.  
 Dischinger, Patricia, BA, Wilson College, 1966; MSPH, University of North Carolina, 1971; PhD, 1974.  
 Doub, Nancy H., AB, University of North Carolina, 1969; MEd, University of Virginia, 1971; PhD, 1973.  
 East, Paul, LIB, Gray's Inn, London, 1966; LMSSA, University College Hospital, London, 1967; MBBS and LRC PMRCS (conjoint), 1968; LLM, George Washington University, 1970; MPH, Johns Hopkins University, 1973.  
 Fischman, Susan H., BSN, University of Michigan, 1957; MPH, Johns Hopkins University, 1965; DrPH, 1974; Cert. in Nurse-Midwifery, New York Medical College, 1966.\*  
 Hillis, Argye B., BS, Towson State College, 1968; PhD, Johns Hopkins School of Hygiene and Public Health, 1974.  
 Huang, Yih-Min B., BS, Taiwan University, 1967; MS, Illinois State University, 1970; PhD, University of Iowa, 1974.  
 Kassel, Leon, MD, University of Virginia, 1949.\*



- Kennedy, Harold L., BS, University of Denver, 1959; MD, University of Missouri, 1964.\*  
 Levine, Myron M., BS, City College of New York, 1963; MD, Medical College of Virginia, 1967;  
 DTPH, London School of Hygiene and Tropical Medicine, 1974.\*  
 List, Noel D., BA, New York University, 1960; MD, State University of New York, Downstate,  
 1965; MPH, Harvard University, 1967.  
 Miller, Louis W., BS, University of Maryland, 1963; MD, 1967; MPH, Johns Hopkins University,  
 1969.  
 Ostroff, Morris, BA, University of Massachusetts, 1964; MD, University of Vermont, 1968;  
 MPH, Johns Hopkins University, 1973.\*  
 Pitts, John L., Roanoke College, MD, Medical College of Virginia, 1948; MPH, Johns Hopkins  
 University, 1959.\*  
 Smith, Keith, BS, University of Michigan, 1943; MS, Marshall University, 1969; PhD, Johns  
 Hopkins University, 1972.  
 Wilson, Phillip D., BA, University of Colorado, 1956; MS, University of Minnesota, 1963; PhD,  
 Johns Hopkins University, 1970.  
 Zimmerly, James G., BA, Gannon College, 1962; MD, University of Maryland, 1966; MPH,  
 Johns Hopkins University, 1968; JD, University of Maryland, 1969.\*

#### *Instructor*

- Barker, William, BA, Princeton University, 1962; MD, Johns Hopkins University, 1966.\*  
 Booth, Rachael A., BSN, University of Maryland, 1968; MS, 1970.  
 Cash, Richard A., BS, University of Wisconsin, 1962; MD, New York University, 1966.\*  
 Flynn, James, BA, Dublin University, 1960; MD, 1962; MA, 1964; MPH, Johns Hopkins Univer-  
 sity, 1970.\*  
 Gendason, Howard, AB, Western Maryland College, 1957; MD, University of Maryland, 1962.\*  
 Guberski, Thomasine, BA, American International College, 1964; MS, University of Michigan,  
 1969.  
 Helmuth, Michele, BSN, University of Delaware, 1968; MSN, Emory University, 1971.  
 Krompholz, Brigita M., MD, Charles University of Prague.  
 Moran, Marguerite, BS, St. John's University, 1965; MD, New York Medical College, 1969.\*  
 Vogel, F. Philip, BA, Catholic University, 1965.\*  
 Wiser, Thomas H., BS, University of Minnesota, 1971; Parm. D, 1973.

#### *Associate*

- De Hoff, John B., AB, Johns Hopkins University, 1935; MD, 1939; MPH, 1967.\*  
 Forman, Sandra A., BS, The City College of New York, 1968; MA, Columbia University, 1969.  
 Hawkins, Barbara L., BS, North Carolina State University, 1962; MS, Johns Hopkins University,  
 1969.  
 Keiser, Mary, BA, Goucher College, 1940.\*  
 Kocher, Audrey, BS, Pennsylvania State University, 1966; MS, Case Western Reserve Univer-  
 sity, 1968.  
 Martin, Clarence W., BA, University of Maryland, 1936; MD, 1940.\*  
 Moseley, Herbert L., BS, Johnson C. Smith University, 1935; MD, Howard University, 1940.

## **SURGERY**

#### *Professor*

- Mason, G. Robert, chairman; BA, Oberlin College, 1955; MD, University of Chicago, 1957;  
 PhD (physiology), Stanford University, 1968.  
 Arnold, James G., BA, University of North Carolina, 1925; MD, Johns Hopkins University, 1929.  
 Attar, Safuh, BA, American University of Beirut, Lebanon 1947; MD, 1951.  
 Blanchard, Cyrus L., BA, Clark University, 1943; MD, George Washington University, 1946.  
 Cowley, R. Adams, MD, University of Maryland, 1944.\*  
 Crosby, Robert M. N., MD, University of Maryland, 1943.\*  
 Dagher, Fuad J., BA, American University of Beirut, Lebanon, 1954; MD, 1958.\*  
 Flotte, C. Thomas, BS, Franklin and Marshall College, 1943; MD, Jefferson Medical College,  
 1946.\*  
 Hubbard, Thomas B., Jr., BA, Princeton University, 1938; MD, Columbia University, 1942; PhD  
 (surgery), University of Minnesota, 1952.\*  
 Hull, Harry C., MD, University of Maryland, 1932.  
 McLaughlin, Joseph S., Loyola College, 1954; MD, University of Maryland, 1956.  
 Morgan, Thomas, MB, Cambridge University, 1943; MD, University College Hospital Medical  
 School, London, 1945.

Mosberg, William H., Jr., BS, University of Maryland, 1942; MD, 1944.\*  
 Smith, Gardner W., MD, Harvard Medical School, 1956; AB, Princeton University, 1969.\*  
 Thompson, Raymond K., BS, University of Maryland, 1937; MD, 1941.\*  
 Young, John D., Jr., acting director, University of Maryland Hospital; BA, Bridgewater College, 1938; MD, University of Maryland, 1941.

#### *Associate Professor*

Abrams, Robert C., AB, Johns Hopkins University, 1935; MD, 1939.\*  
 Adams, Thurston R., MD, University of Maryland, 1934.\*  
 Campbell, Edward W., Jr., AB, Amherst College, 1954; MD, Hahnemann Medical College, 1958.\*  
 Currie, Richard A., BS, McGill University, 1946; MDCM, 1948.\*  
 Dorfman, Howard D., BA, New York University, 1947; MD, SUNY, Downstate, 1951.\*  
 Galleher, Earl P., Jr., BA, Princeton University, 1949; MD, Johns Hopkins University, 1953.\*  
 Hankins, John R., BA, University of Virginia, 1945; MD, University of Maryland, 1948.  
 Klebanoff, Gerald, BA, New York University, Washington Square, 1952; MD, Chicago Medical School, 1956.\*  
 LaBrosse, Elwood, BS, Northwestern University, 1945; MS, 1948; MD, 1949; PhD, University of Texas, 1956.  
 Michael, Roger H., BA, Oberlin College, 1953; MD, Western Reserve University, 1957.  
 Miller, John E., BA, Pennsylvania State University, 1938; MD, Jefferson Medical College, 1942.\*  
 Schmeisser, Gerhard, AB, Princeton University, 1949; MD, Johns Hopkins University, 1953.\*  
 Tansey, John J., AB, Brown University, 1942; MD, University of Maryland, 1945.\*  
 Turney, Stephen Z., BS, John Carroll University, 1955; MD, Georgetown University, 1959.  
 Walker, Michael D., BS, Yale University, 1956; MD, Boston University, 1960.\*

#### *Assistant Professor*

Amoss, Willard, BA, Western Maryland College, 1964; MD, University of Maryland, 1968.  
 Austin, Ernest, BS, St. John's University, 1953; MD, Howard University, 1957.\*  
 Baker, Dole P., BA, Harvard University, 1961; MD, Jefferson Medical College, 1965.\*  
 Becker, Larry, BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.\*  
 Breschi, Louis C., BS, Loyola College, 1958; MD, University of Maryland, 1962.\*  
 Bruce, William G., BA, Transylvania College, 1960; MD, University of Maryland, 1965.  
 Cherry, Jerrie, BA, University of Virginia, 1951; MD, Johns Hopkins University, 1955.\*  
 Cicci, Regina L., BS, Kent State University, 1960; MA, Northwestern University, 1961.  
 Clark, Francis A., Jr., MD, University of Maryland, 1961.\*  
 Cranley, Robert E., BS, University of Maryland, 1956; MD, 1958.\*  
 Decker, J. Scott, BS, University of Illinois, 1957; MD, 1961.\*  
 Diamond, Liebe S., BA, Smith College, 1951; MD, University of Pennsylvania, 1955.\*  
 Doyle, Robert L., BS, Loyola College, 1959; MD, University of Maryland, 1964.\*  
 Ferris, Philip J., BA, Johns Hopkins University, 1954; MD, 1958.\*  
 Gelber, Rene L., BA, Pomona College, 1959; MD, University of California, 1963.\*  
 Greenstein, George H., BA, Johns Hopkins University, 1941; MD, 1950.\*  
 Gudwin, Arthur L., BS, Tufts University, 1959; MD, 1963.\*  
 Herrmann, Raymond W., BA, University of Illinois, 1941; MD, St. Louis University, 1946.\*  
 Horwitz, Milton R., BA, University of Pennsylvania, 1962; MD, Temple University, 1966.  
 House, Homer C., BS, Washington and Lee University, 1959; MD, George Washington University, 1964.  
 Imbembo, Anthony, AB, Columbia University, 1963; MD, 1967.\*  
 Luce, Edward A., BS, University of Dayton, 1961; MD, University of Kentucky, 1965.\*  
 Lynn, William D., BA, Princeton University, 1940; MD, Johns Hopkins University, 1943.\*  
 Mays, Howard B., MD, University of Maryland, 1935.\*  
 Minken, Stanley L., BS, University of Maryland, 1958; MS, George Washington University, 1959; MD, University of Maryland, 1963.\*  
 Novin, Neil, BA, New York University, 1951; MD, State University of New York, 1955.\*  
 Orlando, Joseph, BS, Loyola College, 1962; MD, University of Maryland, 1967.\*  
 Pierpont, Ross, BS, University of Maryland, 1939; MD, 1940.\*  
 Reichmister, Jerome P., BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.\*  
 Rever, William B., Jr., MD, University of Maryland, 1950.\*  
 Satterfield, John R., Jr., BS, University of South Carolina, 1960; MD, Medical College of South Carolina, 1964.

Schneider, Richard J., BA, University of Chicago, 1966; PhD (neuropharmacology), University of Pittsburgh, 1972.  
 Sharrett, John O., MD, University of Maryland, 1952.\*  
 Shermeta, Dennis W., BS, University of Michigan, 1961; MD, 1965.\*  
 Singer, John A., BA, Cornell University, 1963; MD, State University of New York, Downstate Medical Center, 1967.  
 Sothoron, Warren H., BS, Juniata College, 1958; MD, University of Maryland, 1962.\*  
 Sterioff, Sylvester, BA, Harvard University, 1959; MD, Washington University, 1963.\*  
 Su, Chi-Tsung, MD, National Taiwan University, 1961.\*  
 Suter, Charles M., BSEE, Drexel Institute, 1964; PhD (physiology), University of Maryland, 1969.  
 Tarr, Norman, BS, Washington College, 1948; MD, University of Maryland, 1948.\*  
 Weiner, Israel H., BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.\*  
 Wenzlaff, Edward F., BA, Columbia College, 1948; MD, University of Buffalo, 1954.\*

### *Instructor*

Abeshouse, George A., AB, Yale University, 1952; MD, University of Maryland, 1956.\*  
 Alderman, George C., BS, Loyola College, 1948; MD, University of Maryland, 1952.\*  
 Barrick, Donald M., BA, George Washington University, 1958; MD, University of Maryland, 1962.\*  
 Belcher, Henry V., BA, University of Virginia, 1948; MD, Medical College of Virginia, 1952.\*  
 Blumberg, Joan L., BS, Towson State College, 1970; MS, Pennsylvania State University, 1971.  
 Clayton, Marco, BS, Union College, 1954; MD, PhD (hematology), Johannes Gutenberg, Germany, 1964.\*  
 Cohen, Edward R., BS, University of Maryland, 1963; MD, 1967.\*  
 Cole, Fred N., BA, University of Virginia, 1952; MD, 1956.\*  
 Cook, David M., BS, Ohio University, 1962; MD, University of Maryland, 1966.\*  
 Cunningham, Raymond M., BA, Loyola College, 1935; MD, University of Maryland, 1939.\*  
 Davis, Earl C., BS, Concord College, 1958; MD, University of Virginia, 1961.\*  
 Demarco, Salvatore, AB, Loyola College, 1955; MD, University of Maryland, 1959.\*  
 Ellis, Michael, BS, Loyola College, 1961; MD, University of Maryland, 1966.\*  
 Engnoth, Milton I., BS, University of Maryland, 1953; MD, 1957.\*  
 Fox, Madeline, BA, Queens College, 1966; MS, University of Michigan, 1967.  
 Friedler, Stanley, BS, University of Maryland, 1961; MD, 1965.\*  
 Gillis, David, BS, Loyola College, 1960; MD, University of Maryland, 1965.\*  
 Goldstein, Robert B., MD, University of Maryland, 1954.\*  
 Hammond, Anthony F., BS, Seton Hall University, 1953; MD, University of Maryland, 1957.\*  
 Hebb, Donald, AB, St. John's College, 1933; MD, Johns Hopkins University, 1938.\*  
 Henderson, Charles M., BS, University of Maryland, 1955; MD, 1957.\*  
 Hennessy, Robert G., BS, Holy Cross College, 1956; MD, Georgetown University, 1960.\*  
 Hicks, Evelyn C., BA, University of Maryland, 1958; MA, 1966.\*  
 Hudson, Paul C., AB, Princeton University, 1947; MD, University of Maryland, 1955.\*  
 Jasion, Arthur, BS, University of Maryland, 1957; MD, 1959.\*  
 King, August, Jr., BS, University of Maryland, 1957; MD, 1959.\*  
 Lancelotta, Charles J., BA, Loyola College, 1964; MD, University of Maryland, 1968.\*  
 Layne, Edward, BS, Ohio State University, 1961; MD, 1965.\*  
 McHold, Davis S., BS, Moorehead University, 1962; MD, University of Maryland, 1967.\*  
 Meyer, Paul D., BS, University of Maryland, 1955; MS, George Washington University, 1956; MD, University of Maryland, 1960.\*  
 Natale, Ralph D., BA, Johns Hopkins University, 1955; MD, University of Maryland, 1959.\*  
 Nieman, Rolf, BA, Columbia Union College, 1961; MD, Loma Linda University, 1965.\*  
 Ominsky, Barry E. L., BS, University of Maryland, 1962; MD, 1966.\*  
 Ordonez, Jorge R., MD, San Carlos University, 1963.\*  
 Ormsbee, Herbert S., III, BA, Lawrence University, 1970; MS, University of Wisconsin, 1972; PhD, 1974.  
 Pidcock, Paulette, BS, California State College, Pennsylvania, 1967; MA, University of Maryland, 1971.  
 Plasse, Jerome, AB, Columbia College, 1955; MD, New York University, 1959.\*  
 Ritchie, George F., BS, Manhattan College, 1962; MD, Creighton University, 1966.\*  
 Rosell, Luis A., MD, University of Seville, Spain, 1952.\*  
 Russo, G. Lee, BA, Loyola College, 1955; MD, University of Maryland, 1959.\*  
 Sapre, Arun B., MB, BS, Medical College, Nagpur University, India, 1960.\*  
 Snyder, Jerome, PhD, University of Maryland, 1928; BS, 1930; MD, 1932.\*



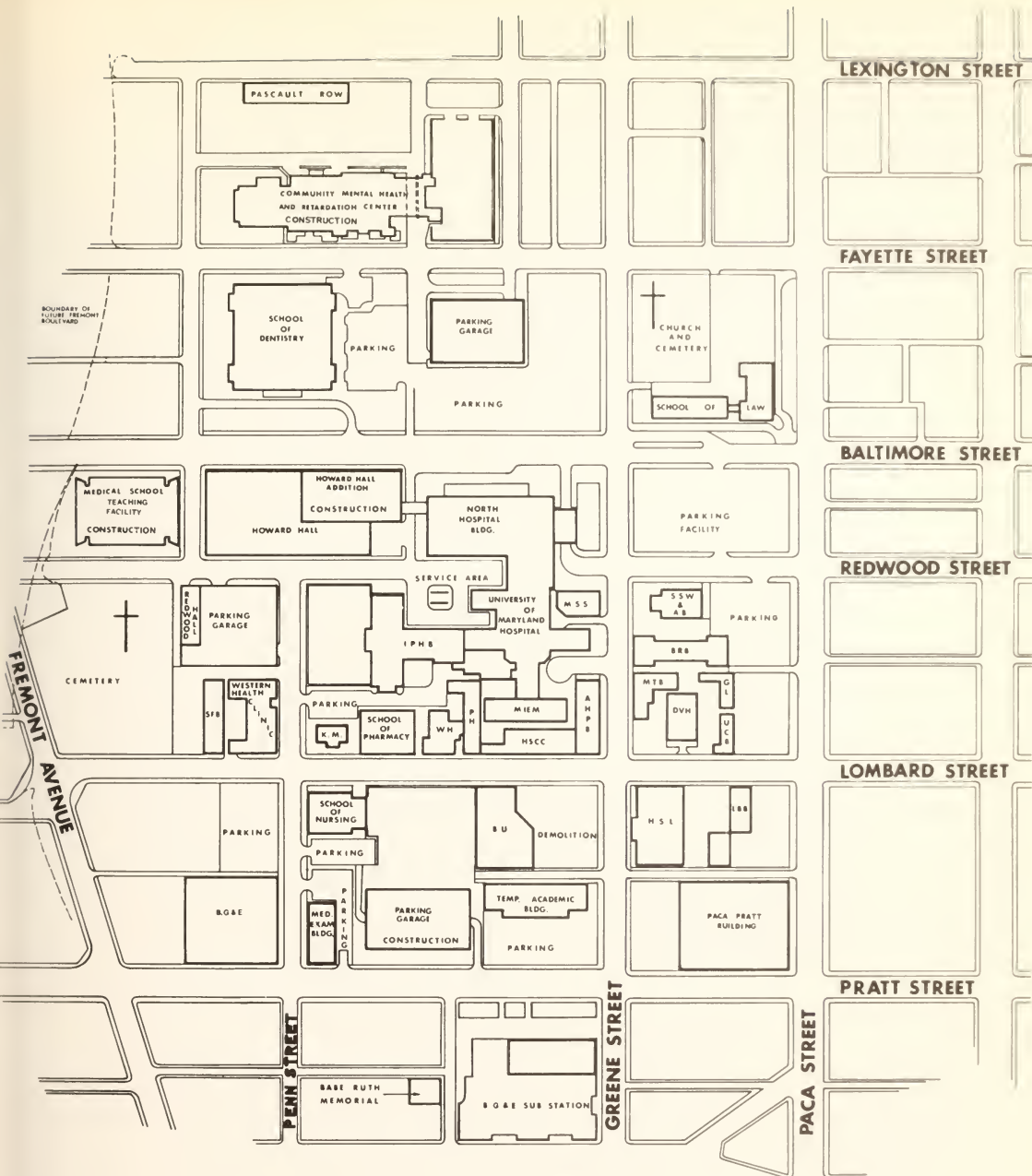
Spence, Kenneth F., BS, Washington and Lee University, 1953; MD, University of Maryland, 1957.\*  
 Steinwald, Osmar, BA, Johns Hopkins University, 1958; MD, University of Maryland, 1962.\*  
 Suddhimondala, Chawalit, MD, Siriraj Hospital and Medical School, Bangkok, Thailand, 1960.  
 Sugar, Fred N., BS, University of Maryland, 1961; MD, 1965.\*  
 Szczepinski, Adam F., AB, Johns Hopkins University, 1953; MD, 1957.\*  
 Tountas, Chris P., BS, University of Maryland, 1958; MD, 1963.\*  
 White, John P., III, MD, University of Maryland, 1947.\*  
 Wilhelmsen, Hans, DDS, University of Maryland, 1955; MD, 1959.\*

*Associate*

Blumenfeld, Walter, BS, Antioch College, 1967.  
 Cross, Richard, BS, Mt. St. Mary's College, 1943; MD, University of Maryland, 1946.\*  
 Fraiman, Moises, MD, University of San Marcos, 1954.\*  
 Phelan, Patrick C., BA, Loyola College, 1935; MD, University of Maryland, 1942.\*  
 Settle, William, BA, University of Pennsylvania, 1930; MD, 1933.\*  
 Stewart, Edwin, MD, University of Maryland, 1943.\*

*Emeritus*

Houston, Toulson W., MD, University of Maryland, 1913.  
 Yeager, George H., BS, University of West Virginia, 1925; MD, University of Maryland, 1929.



NORTH

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## EXISTING CAMPUS PLAN

UNIVERSITY OF MARYLAND AT BALTIMORE

PREPARED BY  
PHYSICAL PLANT DEPARTMENT

FILE NO PL 95

ABBREVIATION	BUILDING NAME
AHPB	ALLIED HEALTH PROFESSIONS BUILDING
BRB	BRESSLER RESEARCH BUILDING
BU	BALTIMORE UNION
DVH	DAVIDOVI HALL
GL	GRAY LABORATORY
HSCC	HEALTH SCIENCES COMPUTER CENTER
HSL	HEALTH SCIENCES LIBRARY
IPHB	INSTITUTE OF PSYCHIATRY & HUMAN BEHAVIOR
KM	KELLY MEMORIAL
LSB	LOMBARD BUILDING
MIEM	MARYLAND INSTITUTE FOR EMERGENCY MEDICINE
MSS	MASTER SWITCHING STATION
MTB	MEDICAL TECHNOLOGY BUILDING
PH	PARSONS HALL
STB	STORAGE FACILITY BUILDING
SSW & AB	SCHOOL OF SOCIAL WORK & ADMIN BUILDING
UCB	UNIVERSITY COLLEGE BUILDING
WH	WHITENURST HALL

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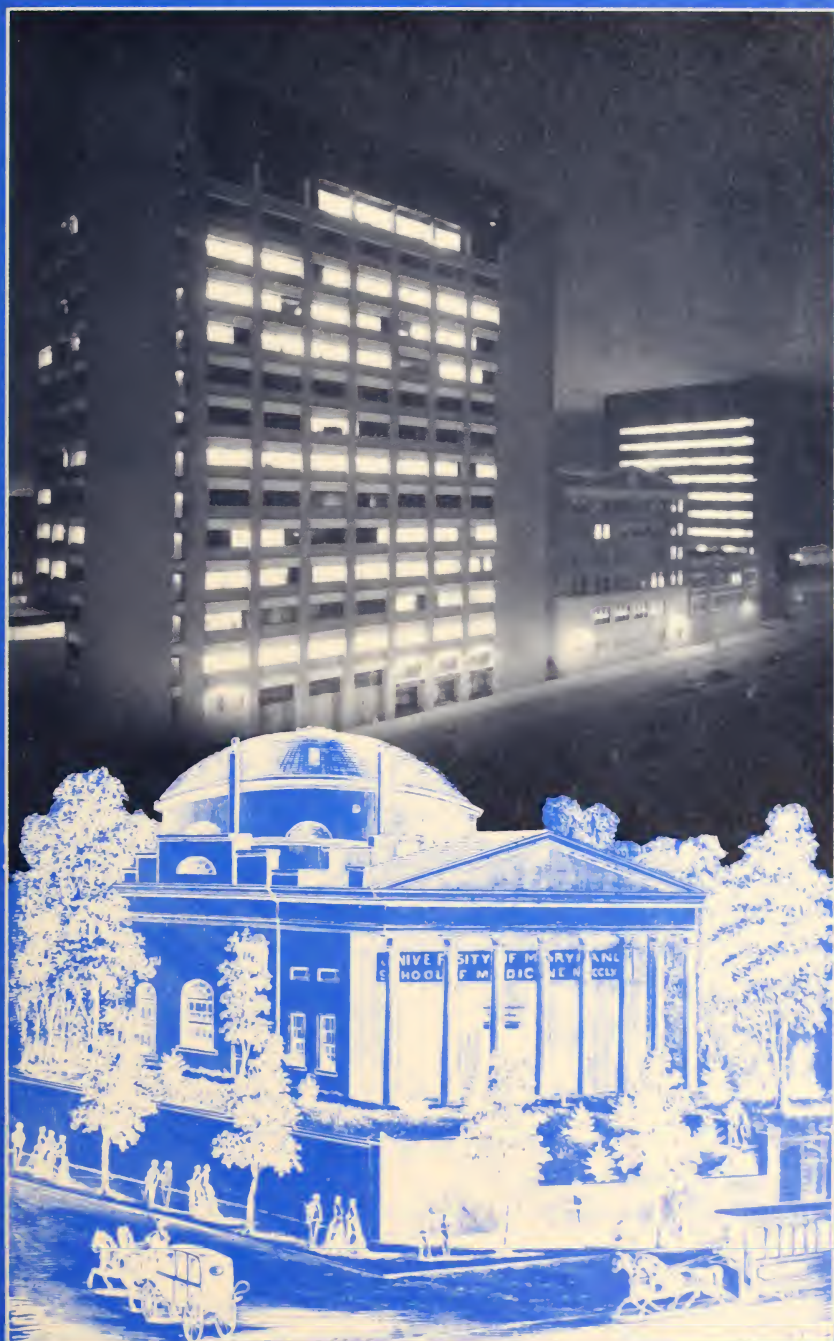


**School of Medicine  
University of Maryland at Baltimore  
Baltimore, Maryland 21201**



# 1977-1979 School of Medicine

UNIVERSITY OF MARYLAND AT BALTIMORE





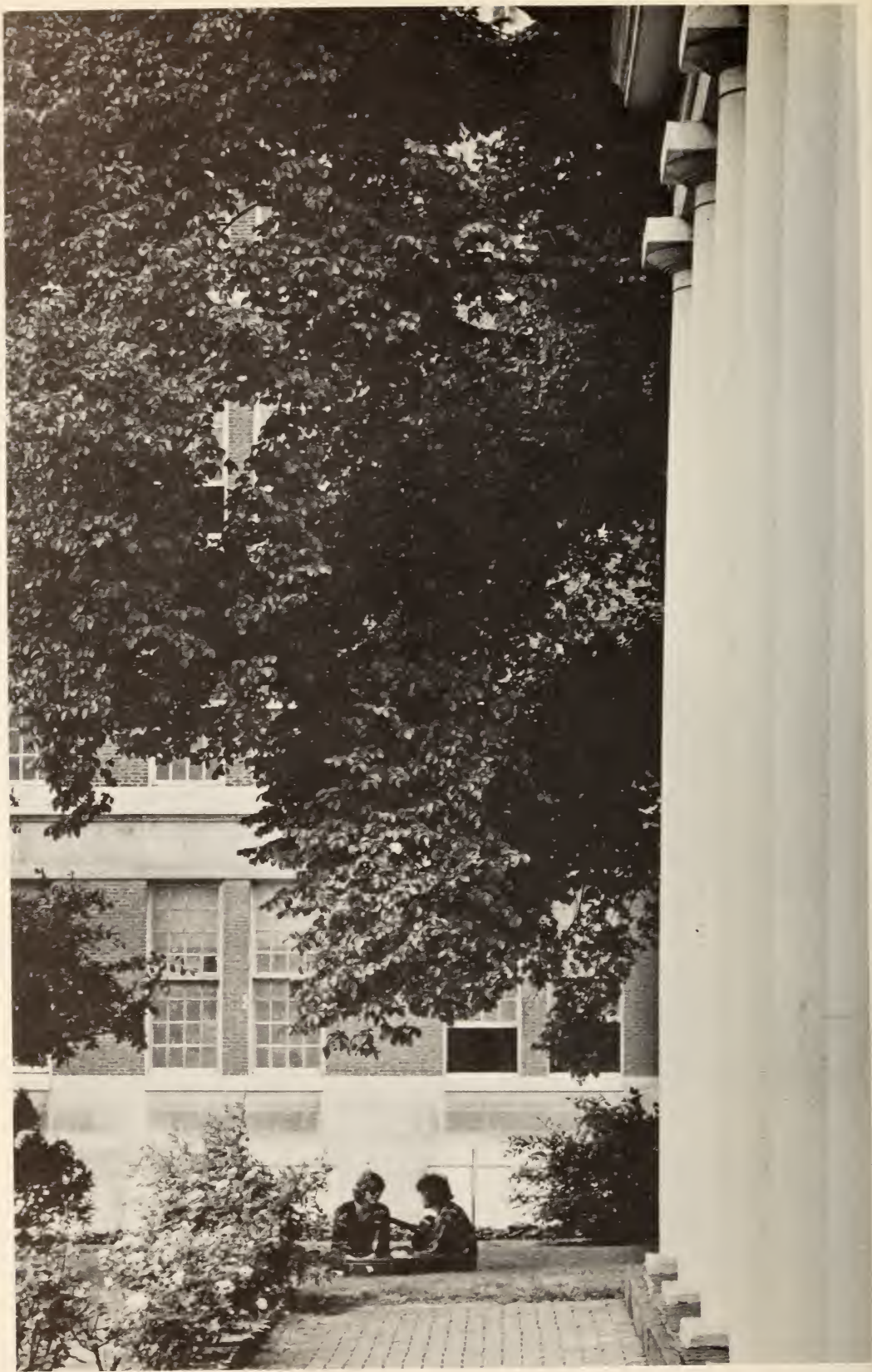
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UNIVERSITY OF MARYLAND AT BALTIMORE





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## BOARD OF REGENTS

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Mr. Barry M. Goldman, 1977  
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Mr. Gerard F. (Gary) Miles, 1977  
Mr. A. Paul Moss, 1978  
Mr. Peter F. O'Malley, 1980  
The Hon. Joseph D. Tydings, 1979

## UNIVERSITY OF MARYLAND CENTRAL ADMINISTRATION

### *President*

Wilson H. Elkins, BA, University of Texas, 1932; MA, 1932; B Litt, Oxford University, 1936; D Phil, 1936.

### *Vice President for Academic Affairs*

R. Lee Hornbake, BS, California State College, Pennsylvania, 1934; MA, Ohio State University, 1936; PhD, 1942.

### *Vice President for General Administration*

Donald W. O'Connell, BA, Columbia University, 1937; MA, 1938; PhD, 1953.

### *Vice President for Graduate Studies and Research*

Michael J. Pelczar, Jr., BS, University of Maryland, 1936; MS, 1938; PhD, State University of Iowa, 1941.

### *Vice President for Agricultural Affairs and Legislative Relations*

Frank L. Bentz, Jr., BS, University of Maryland, 1942; PhD, 1952.

### *Assistant to the President for University Relations*

Robert A. Beach, AB, Baldwin-Wallace College, 1950; MS, Boston University, 1954.

### *Vice President for Development*

Robert G. Smith, BS, State University of New York at Genesco, 1952; MA, Ohio University, 1956.



## UMAB PRINCIPAL ACADEMIC OFFICERS

### *Dean, Dental School*

Errol L. Reese, BS, Fairmount State College, 1960; MS, University of Detroit, 1968; DDS, University of West Virginia, 1963.

### *Dean, School of Law*

Michael J. Kelly, BS, Princeton University, 1959; PhD, Cambridge University, 1964; LLB, Yale Law School, 1967.

### *Dean, School of Medicine*

John M. Dennis, BS, University of Maryland, 1943; MD, 1945.

### *Dean, School of Nursing*

Marion I. Murphy, BS, University of Minnesota, 1936; MPH, University of Michigan, 1946; PhD, 1959.

### *Dean, School of Pharmacy and Dean, Graduate Studies and Research*

William J. Kinnard, Jr., BS, University of Pittsburgh, 1953; MS, 1955; PhD, Purdue University, 1957.

### *Acting Dean, School of Social Work and Community Planning*

Ruth H. Young, AB, Wellesley College, 1944; MSSW, The Catholic University of America, 1949; DSW, 1965.

## UNIVERSITY OF MARYLAND AT BALTIMORE

### *Chancellor*

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### *Vice Chancellor for Health Affairs*

John M. Dennis, BS, University of Maryland, 1943; MD, 1945.

### *Assistant to the Chancellor*

W. Jackson Stenger, BA, Washington College, 1949; MA, Georgetown University, 1959; PhD, 1965.

### *Assistant to the Chancellor*

Roy Borom, BA, Wooster College, 1949; MSSA, Western Reserve University School of Applied Social Sciences, 1951.

### *Director of Admissions and Registrations*

Wayne A. Smith, BS, University of Maryland, 1962.

### *Director of Business Services*

Robert C. Brown, BA, University of Maryland, 1963.

### *Director of Computer Services*

Frederick Straughn, BS, University of Baltimore, 1963; MBA, Loyola College, Baltimore, 1975.

*Director of Personnel*

Ronald J. Baril, BSEd, Bridgewater State College, Massachusetts, 1965.

*Director of Physical Plant*

Robert L. Walton, BS, University of Maryland, 1938.

*Director of Student Health Service*

Wilfred H. Townshend, BA, Johns Hopkins University, 1936; MD, University of Maryland, 1940.

*Director of University of Maryland Hospital*

G. Bruce McFadden, BS, Virginia Polytechnic Institute, 1957; MHA, Medical College of Virginia, 1961.

## SCHOOL OF MEDICINE ADMINISTRATION

*Dean*

John M. Dennis, BS, University of Maryland, 1943; MD, 1945.

*Senior Associate Dean*

Morton I. Rapoport, BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.

*Associate Dean for Admissions*

Willard M. Allen, BS, Hobart College, 1926; MS, University of Rochester, 1929; MD, 1932.

*Associate Dean for Governmental Liaison*

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*Associate Dean for Student Affairs and Medical Education*

Murray M. Kappelman, BS, University of Maryland, 1951; MD, 1955.

*Assistant Dean for Continuing Education*

William F. Jessee, AB, Stanford University, 1968; MD, University of California, 1972.

*Assistant Dean for Fiscal Affairs*

Gregory F. Handlir, BS, Loyola College, Baltimore, 1969; MBA, 1973.

*Assistant Deans for Student Affairs*

Bernice Sigman, MD, University of Maryland, 1960; MS, Washington University, 1966.

Robert L. Harrell, Jr., BS, Hampton Institute, 1961; PhD, Iowa State University, 1966.

Keith Smith, BS, University of Michigan, 1943; MS, Marshall University, 1969; PhD, Johns Hopkins University, 1972.

Gary D. Plotnick, AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.

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# THE SCHOOL, THE CAMPUS, THE CITY





## THE SCHOOL . . .

The University of Maryland School of Medicine, the fifth medical school to be founded in the United States, was established in 1807 by the General Assembly of the State of Maryland. The principles upon which the school was established have not changed, as they were stated in the Founding Act: "Be It Enacted . . . That a College . . . by the name of The College of Medicine of Maryland, be established . . . upon the following fundamental principles . . . The said College shall be founded and maintained forever upon a most liberal plan, for the benefit of students of every country and every religious denomination, who shall be freely admitted to equal privileges and advantages of education, and to all the honors of the College, according to their merit, without requiring or enforcing any religious or civil tests." The school was integrated racially almost from its inception, and women were first admitted in 1921.

A Board of Regents was selected, and Dr. John Beale Davidge, one of the founders, was appointed as the first dean of the new school. Under his farsighted leadership, a new concept of medical education was formed: "The science of medicine could not be successfully taught under the usual organization of medical schools; that without the aids of physiology and pathology, either associated with anatomy or as a separate chair of institutes, the philosophy of the body in sickness or in health could not be understood."

At the end of 1807, a medical school existed in Baltimore with officers and faculty, but without buildings or funds. Dr. Davidge and his small faculty continued to teach in their own homes, as they had been doing prior to the official Founding Act. From the beginning, strong emphasis was placed on "bedside" teaching, with the first class of seven students receiving clinical instruction at the Baltimore Almshouse, a workhouse and infirmary for the poor. This emphasis has continued over the years, and the concept of direct patient contact remains important today.

A lottery was authorized to finance building, but it was largely due to the enthusiasm and dedication of early faculty members and interested Baltimore citizens that the College of Medicine was able to establish a campus. Land was purchased from Col. John Eager Howard, Revolutionary War hero and former governor, for the sum of \$10,000 of which Col. Howard donated \$1,000. The lot, at what is now Lombard and Greene Streets, was then on the outskirts of town affording a clear view of the Patapsco River. Its remote site was considered an advantage since the public was violently opposed to dissection of the human body, as Dr. Davidge was well aware, having had his own small anatomic theater destroyed several years previously by an angry mob.

The first building, now known as Davidge Hall, was constructed on the lot in 1812, and is the oldest building in the United States used continuously for medical education. Its architect, Robert Carey Long, Sr., used the Pantheon in Rome as his model for the building. In spite of remodeling throughout the years, some of the dissecting "cubbyholes" still remain, along with secret stairways and hidden exits which afforded both students and professors safe passage from angry mobs. Plans call for Davidge Hall to be fully restored to its original state and maintained as a medical museum.

In 1823, the Baltimore Infirmary, the forerunner of the University of Maryland Hospital, was built across from Davidge Hall. The school was one of the first in the country to build its own hospital for clinical instruction; and it was here that intramural residencies for senior students were first established. This building was still in active use until 1973, when all the clinics located there were moved into the new addition to the University of Maryland Hospital.

Through the years, there have been many "firsts" at the School of Medicine. One of the early faculty members, Dr. John Crawford, who had been the first to vaccinate Baltimoreans against smallpox in 1800, presented evidence as early as 1810 that tuberculosis was contagious. His personal library became the nucleus of the medical school library, one of the oldest in the country. In 1839, the Baltimore College of Dental Surgery was incorporated, the first such school to be established in the world. The techniques of auscultation and percussion were taught here for the first time in America as early as 1841; and in 1844, Dr. David Stewart, the first professor of pharmacy in the United States, initiated his lectures at Maryland.

From the beginning, the study of human anatomy was recognized as basic in medical education, but the public outcry and the difficulty in obtaining bodies limited dissection. Still, in 1848, Maryland became the first medical school to make anatomical dissection a required course. Six years later, compulsory courses in experimental physiology and microscopy were introduced. A milestone in cancer research occurred in 1853, when Dr. Francis Donaldson became the first person in America to advocate biopsy and microscopic diagnosis of malignancy. Maryland was the first to establish chairs in the diseases of women and children (1867), and diseases of the eye and ear (1873).

Mergers with the Baltimore Medical College in 1913 and the College of Physicians and Surgeons in 1915 provided the University of Maryland School of Medicine with greatly expanded faculty and clinical facilities. In 1920, the state university was established when the professional schools in Baltimore merged with the Maryland State College of Agriculture in College Park and the state assumed financial obligation for all the schools.

## THE CAMPUS . . .

Today, the School of Medicine is part of a professional campus located on 28 acres in downtown Baltimore. This campus, comprising the schools of dentistry, law, medicine, nursing, pharmacy, social work and community planning, in addition to the Graduate School and University of Maryland Hospital, offers the medical student a unique opportunity to participate in the growing number of interdisciplinary educational programs carried out among the professional schools.

Plans are underway for an intensive expansion of the primary care programs, a multidisciplinary effort under the leadership of the vice chancellor for health affairs, that will include the opening of a number of primary care education centers throughout the state, located in inner city and rural communities. Students from the schools of dentistry, medicine, nursing, pharmacy, and social work and community planning will have an opportunity to participate in the educational experiences offered in these centers.

The UMAB campus is in the midst of a physical expansion program as well. Two new teaching facilities for the School of Medicine have recently been erected and the schools of law, pharmacy, and social work and community planning are in the process of planning new buildings. In the near future, a new V.A. Hospital will be built across from the University of Maryland Hospital on Baltimore Street, contributing greatly to the growing resources available to the medical student.

An added attribute to the campus' urban setting is a sense of city vitality that its suburban counterparts can't match. Located just to the west of the exciting inner harbor renewal project, the UMAB campus is enmeshed in the city's total redevelopment effort. The development plan for the campus, formulated by a nationally known consulting firm, includes provision for additional classroom and parking

facilities, library space, student activities and recreational areas, and appropriate landscaping. And since the campus is so close to the heart of Baltimore, favorite pastime activities are within easy reach—many, within walking distance.

## THE CITY

Statistically, Baltimore is the largest city in Maryland, the seventh most populous in the nation, and site of the country's fourth largest foreign-commerce seaport. The Baltimore region has much to offer the student, from the sophistication and culture of a large, metropolitan city, to the beauty and leisure of the waterfront and rural areas that surround it.

Having been the location of many significant events in the nation's history, including the writing of the national anthem, Baltimore maintains a strong feeling for the past as typified by the many charming neighborhoods of restored houses and abundance of historic buildings.

And yet Baltimore has become increasingly forward-thinking, and is making outstanding progress in the revitalization and rebirth of its downtown area. A prime example is Charles Center, one of the early models for urban planning in the country, which incorporates a theater, hotel, shops, and a series of plazas and elevated walkways that are used as settings for frequent fairs, concerts, art shows and festivals. Even closer to campus, one of the most exciting renovations is taking place in the inner harbor. When completed, some 240 acres surrounding the busy port will be redeveloped to include office buildings, apartments, schools, parks, recreational facilities — in all, an entirely new living and working complex.

As a cultural center, Baltimore has offerings to please the most discriminating. It possesses an excellent symphony, a professional opera company, many professional and semi-professional theaters, the Peabody Conservatory of Music, outstanding museums, excellent libraries, and historical and scientific societies, the newest of which is the Maryland Academy of Sciences Center that opened in the inner harbor area in 1976.

Sports fans, too, have a lot to savor in Baltimore thanks to the wide range of professional and collegiate teams. The city is famous, of course, for the Orioles and the Colts, but both spectators and participants will also find excellent hockey, soccer, lacrosse, basketball, horseracing, golf and tennis close at hand. Also nearby is the Chesapeake Bay, offering numerous water sports and the seafood for which Baltimore is famous.



# RESOURCES



## UNIVERSITY OF MARYLAND HOSPITAL

The University of Maryland Hospital, one of the oldest institutions for care of the sick in the state, is the primary teaching facility for the University of Maryland School of Medicine, and a major center for health care, medical education and research.

The original building, known as the Baltimore Infirmary, was built in 1823. The present main hospital was erected in 1933-34, with a capacity of 435 beds. In 1952-53, the Psychiatric Institute building was added as a junctional wing.

A modern, 13-story addition to the hospital was opened early in 1973, increasing the institution's capacity to 864 beds and 50 bassinets. With direct interconnections between the main hospital, the new addition and the Institute of Psychiatry and Human Behavior, the complex functions as one integrated facility, serving the needs of the people of the state of Maryland.

The University of Maryland Hospital is a major referral center for physicians throughout Maryland, offering a broad spectrum of specialized services and sophisticated facilities which are presently unavailable in many other hospitals. Also, the hospital is the primary source of health care for more than 100,000 area residents. As the number of doctors, nurses and health care facilities has steadily decreased in the inner city, the hospital has assumed more responsibility for the health care of the surrounding community. This is reflected in the growing ambulatory patient load, approximating 300,000 combined emergency room and clinic visits annually.

The north hospital addition houses all the ambulatory facilities including an expanded emergency suite, a screening clinic, a pediatric acute primary care unit, the Family Practice Program's Health Center, adult and pediatric specialty clinics, a primary care clinic directed by the Primary Care Program, a new combined inpatient and outpatient adolescent unit, and many other expanded ambulatory services.

The new addition also provides space for new operation and recovery suites and expanded educational facilities, with approximately 100 seating spaces for teaching per floor. All hospital accommodations are a part of the teaching program.

A heliport adjacent to the main hospital permits rapid transportation of accident victims and other intensely ill patients to outstanding treatment in the Maryland Institute for Emergency Medicine. It also serves to speed sick newborns to the intensive care neonatal nursery.

Since 1974 the Baltimore Cancer Research Center, an intramural program of the National Cancer Institute, has occupied the entire ninth floor of the hospital. The BCRC conducts a multidisciplinary program in cancer treatment and research and receives patients from all over the United States.

## AFFILIATIONS

The clinical facilities used in the teaching programs of the School of Medicine are numerous and varied in order to offer a broad spectrum of opportunities ranging from basic health care to complex medical problems requiring expensive, highly specialized facilities and staff.

Crucial to medical care in the Seventies are the community hospitals in which the majority of primary and secondary level health care problems are seen. Recognizing these facts, the medical school has developed a network of institution-to-institution affiliations with community hospitals at three undergraduate levels: undergraduate, graduate and postgraduate.

A closely-knit undergraduate affiliation exists with five community hospitals serving a wide range of patients in varied geographic settings. They are Maryland General, Mercy, Provident, South Baltimore General, and York (Pa.) hospitals. Each has made a major commitment toward being an area health education center, firmly

believing that the end result of a teaching environment is better patient care. Central to this are programs devoted to the continuing education of all staff. In addition, all have well-developed graduate education programs which attract interns and residents who wish to train in a community hospital atmosphere. These hospitals have recruited full-time educators in most departments, who hold academic appointments as full-time faculty members and participate in activities of the medical school.

Closely linked with the University of Maryland Hospital are the Baltimore and Ft. Howard Veterans Administration hospitals. Within a few years the Baltimore Veterans Administration Hospital will be completely integrated with the medical school and located on this campus. Currently, it is supervised by a dean's committee and the departments of medicine and pathology provide complete faculty and housestaff coverage.

Still other facilities are needed to complete the educational opportunities for physician training. Special programs involving one or more departments are conducted at Montebello State Hospital, a state rehabilitation and chronic care facility; the John L. Deaton Medical Center, a new extended care and rehabilitation facility; Baltimore City Hospitals, an acute care general hospital; Mount Wilson Hospital, a state tuberculosis facility; James L. Kernan Hospital, for children and adults with specialized orthopaedic problems; the Sheppard-Pratt Hospital, a private psychiatric hospital; and Spring Grove and Rosewood, state mental health hospitals.

A recent affiliation agreement with Suburban Hospital in Bethesda, Maryland emphasizes the training of physicians interested in the practice of family medicine. At present, this affiliation encompasses continuing and graduate education in family medicine, including residency training. Elective student rotations are also available. Suburban is a 350-bed non-profit community hospital which serves the northern suburbs of Washington, D.C.

**Baltimore Veterans Administration Hospital.** The hospital was constructed 24 years ago on a 15-acre campus located approximately three miles from the Johns Hopkins Medical Institutions and four miles from University of Maryland Hospital.

The mission of the hospital is to provide general medical and surgical care for eligible veterans and to operate a small, active drug treatment program and an outpatient clinic for service-connected problems. It is affiliated with the medical schools of both University of Maryland and Johns Hopkins University. The medical, laboratory, genitourinary surgery, drug treatment-psychiatric services are linked with the University of Maryland Hospital while the surgical service (including general, neuro, orthopaedic and ophthalmic surgery) is associated with Johns Hopkins University School of Medicine. The radiology service is affiliated with both schools. All of the 47 full- and part-time staff plus 217 consultants and attending physicians are active faculty members of one of the medical schools.

The 67 interns and residents are selected by the medical schools and rotated for blocks of time to the University of Maryland or the Johns Hopkins hospitals, as well as to the Baltimore Veterans Administration Hospital. In addition to medical students, nursing, social work and psychology students rotate through the hospital for portions of their training. The active and growing research program adds to the academic aspects of the environment.

The medical library contains 183 current periodicals, 3,137 books and monographs and obtains many inter-library loans from the two affiliated medical schools.

House officers and students from the various health science disciplines also rotate through the Ft. Howard Veterans Administration Hospital. This hospital em-



phasizes rehabilitation medicine and provides extended care for veterans recovering from serious illness or injury. A close-working relationship exists between the Baltimore and Ft. Howard Veterans Administration hospitals whose services complement each other.

**Maryland General Hospital.** As an institution which is constantly growing and expanding since it was founded in 1883, the hospital offers a broad range of modern facilities and equipment designed to meet the health needs of downtown metropolitan Baltimore. Through the years, Maryland General has expanded from a capacity of 50 beds to its present bed complement of 428, plus 25 bassinets.

The present hospital began in 1946 when the people of Baltimore contributed funds for a new building program. In 1956, the first major unit of seven floors was dedicated. In 1961, a nurses' home was built and in 1962, another major unit of the hospital was completed. A seven-story eye, ear, nose and throat wing was finished in December 1968.

The EENT wing houses the central supply room, pharmacy, pediatric department and a coronary and intensive care unit. The special care unit contains 13 beds, each with the latest in electronic monitoring devices. Developments in kidney research and treatment are centered in the renal laboratory and home training dialysis program which treats hundreds of patients yearly. Other special areas such as the Department of Nuclear Medicine and a pulmonary laboratory are all part of Maryland General's continuous growth. The recent completion of a new facility spanning the main hospital and the former Richmond Market Armory has provided needed space for a new gastroenterological research laboratory.

Additionally, construction of a new special procedure-cardiac catheterization room was recently completed. Located on the main floor adjacent to the Department of Radiology, this \$300,000 unit houses highly sophisticated x-ray equipment utilized in the special diagnostic procedure of angiography.

A new Intermediate Care Unit has also been added to the existing hospital facilities. Equipped with a telemetry monitoring system, the unit consists of 21 patient beds.

For the fiscal year ending June 30, 1976, there were 14,008 admissions, 14,659 surgical procedures and 803 obstetrical deliveries. The hospital's outpatient department accommodates in excess of 100,000 visits per year with expectations to reach over 200,000 by the year 1978. Because of this increased demand for outpatient services, the hospital purchased and renovated the Richmond Market Armory to provide additional space needed for general clinics.

**Mercy Hospital.** Its history can be traced to the foundation of the Washington University School of Medicine in 1827. In 1872, some of the members of this institution founded a new school, which was the beginning of the College of Physicians and Surgeons of Baltimore.

Washington University School of Medicine opened a dispensary and a small hospital at the corner of Saratoga and Calvert streets and named it the Baltimore City Hospital. This building served both as a hospital and a medical school. In 1874, the Sisters of Mercy, upon the invitation of the Washington University School of Medicine, assumed responsibility for the nursing services of the hospital. In 1878, Washington University merged with the College of Physicians and Surgeons.

The Sisters of Mercy, in 1888, with the assistance of the faculty of the College of Physicians and Surgeons, laid the cornerstone for a new hospital adjacent to the earlier buildings. The name of the institution was changed to Mercy Hospital in 1909; and, in 1911, another larger building was formally opened, occupying the re-

maining frontage on that block of Calvert Street. Mercy Hospital arranged, in 1921, to purchase the original College of Physicians and Surgeons building from the University of Maryland.

Many additions have been made to Mercy's physical plant over the years. The present 21-story hospital on St. Paul Place, close to the commercial center of Baltimore, was opened in 1963. A large, modern ambulatory patient department with numerous design innovations to accommodate both private and clinic patients was completed in 1969. Mercy's community outreach program today includes satellite clinics for outpatient services in South Baltimore and Little Italy. The Robert Wood Johnson Foundation in 1976 granted Mercy nearly \$500,000 to expand its services at the Mercy Southern Health Center in South Baltimore.

Mercy's medical advances have included: in 1897, the opening of the only Pasteur Institute for the treatment of rabies south of New York; in 1920, the establishment of the first bronchoscopic clinic in Baltimore; in 1943, opening of the first anticoagulant clinic in Baltimore (serving more than 32,000 patients in 1976); in 1965, completion of a new gastroenterological research laboratory and establishment of a center for gastrointestinal endoscopy; and, in 1974, expansion of its nuclear medicine department and the first use in Maryland of phaco-emulsification ultrasound equipment for the removal of cataracts.

The hospital is very active in the teaching program of the medical school. Faculty members serve as full-time heads of medicine, surgery, pediatrics, and obstetrics-gynecology. Medical students rotate through the Mercy clinical services during the second, third and fourth years. A School of Medical Technology and a School of Radiologic Technology are conducted in conjunction with the hospital. In addition, the hospital presents a number of seminars and symposiums with credits toward continuing education for physicians and surgeons.

During the year ending June 20, 1976, there were 11,250 general admissions, 96,247 outpatient visits, 1,257 obstetrical deliveries and 27,387 visits to the Emergency Medicine Department. The bed capacity is 350 plus 36 bassinets. All hospital beds are available for teaching purposes.

**Provident Hospital.** Since its establishment on June 13, 1894, Provident Hospital has grown from a ten-bed infirmary to a modern 271-bed hospital complex. The busy, well-equipped emergency rooms and outpatient clinics combined with Provident's outreach programs (Provident Druid Children and Youth Development Center, Sickle Cell Anemia Clinic and Program, Project A.D.A.P.T. concerning drug abuse, Provident Quarterway House, Alcoholism Liaison Service Program, and Community Mental Health Program) testify to Provident's genuine commitment to meeting the needs of a chiefly black urban community.

Excellence in patient care is at all times the program's main objective. Provident's community orientation and the broad spectrum of cases available enhance the learning experience. Orientation and instruction in this urban setting are achieved through ward rounds, lectures and bedside teaching. In addition, work in the outpatient department is supervised by members of the active visiting staff of the respective services.

**South Baltimore General Hospital.** Founded in 1904 as a specialty clinic, the hospital expanded within 14 years to a general hospital in order to fully serve the medical needs of South Baltimore. In 1968, the hospital's activities were transferred to its present modern and spacious facilities at 3001 South Hanover Street, overlooking the scenic and historic harbor area. The new location underscores the hospital's commitment to its urban and industrial communities and makes it readily accessible to patients from neighboring suburban areas.

Its current bed capacity of 408 has averaged an occupancy of over 85%. To meet the growing needs of the community, plans are now underway to construct additional facilities to increase the bed capacity to 534 and expand the present capacity for ambulatory care and medical education.

Each year, over 14,000 patients are admitted for hospital care. Approximately 10,000 surgical procedures are performed annually. Special emphasis is given to the capacity to handle industrial and vehicular trauma.

Over 65,000 patient visits are made to the emergency room and outpatient clinics, and approximately 1,400 babies are delivered each year. Specialized facilities such as the coronary care unit and the medical and surgical intensive care units are continually utilized to full capacity.

The hospital has a strong commitment to medical education at all levels. All departments and major divisions are headed by full-time directors, most of whom are on the University of Maryland School of Medicine faculty. Medical students receive instructions at the hospital during their second, third, and fourth years. Graduate education consists of approved residencies in medicine, surgery, obstetrics-gynecology, pathology, and a university-affiliated program in pediatrics. An active program of continuing education is maintained for practicing physicians. In addition, the hospital maintains a School of Practical Nursing and Radiologic Technology, as well as providing clinical facilities for five nursing schools.

The hospital views appointments to its staff as unique opportunities for personal and professional growth. The responsibility given to housestaff members signifies their participation in patient care not as apprentices or employees, but as fellow professionals committed to personal integrity and professional excellence.

**York (Pa.) Hospital.** From its beginning in 1880 with just 12 beds to serve a community of 16,000, York Hospital has grown, on a site established in 1930, to meet today's needs for a population of over 275,000 from the greater York area and communities along the northern Maryland line. Annual admissions exceed 20,000, and more than 60,000 visits are made to the emergency room and outpatient departments each year.

A multi-million dollar expansion program recently doubled the size of the hospital; increased its bed complement to 620, of which 50 are monitored; and created new operating rooms, intensive care units, radiology and laboratory facilities, ambulatory care areas, and additional inpatient nursing units. A modern educational complex with closed-circuit TV houses classrooms, seminar and conference rooms, library, and a large auditorium to accommodate the teaching needs of medical education and the five allied schools—medical records science, medical technology, nursing, radiologic technology, and respiratory therapy.

York Hospital has a medical staff of more than 200, organized into the usual departments and divisions of a major health care institution. The most recent additions are in open-heart surgery and renal dialysis.

Graduate medical education programs include flexible internships and approved residencies in family practice, medicine, obstetrics/gynecology, pathology, and surgery. Additional teaching programs exist in cardiology, emergency room/outpatient services, endocrinology, gastroenterology, hematology/oncology, infectious diseases, neurology, nuclear medicine, pediatrics, psychiatry, pulmonary services, and radiology/radiotherapy.

More than 50 medical students elect York Hospital rotations each year. Faculty leadership and supervision is provided by full-time coordinators in each major teaching department. Instruction is provided by a full-time staff of more than 20, and major commitments from the voluntary attending staff.



York Hospital carries on an organized program of continuing medical education, approved by the Pennsylvania Medical Society, and an unusually active schedule of departmental conferences.

## AREA HEALTH EDUCATION CENTER PROGRAM

One of the major thrusts in the University of Maryland at Baltimore's commitment toward improving health care and delivery programs in primary care is the Area Health Education Center (AHEC) program. This program is under the direction of the Office for Coordination of Primary Care Programs, the campus-wide office responsible for interdisciplinary and interprofessional primary health care programs in education, care and research.

The AHEC program has been developed to provide a comprehensive health care education program for undergraduate and graduate medical students, as well as for students from the other four UMAB health professional schools. The University received formal legislative support for the AHEC program in 1976, when the Maryland State Legislature passed a bill authorizing a statewide medical education and training system. House Bill #38 established a formal mechanism for the University to create AHECs, described as "multiple health education and training centers [which] will attract students, interns and residents to the several geographic areas, thereby attracting increased numbers of practicing physicians, encouraging development of health care facilities, providing for the training of additional numbers of allied health care professionals and increasing capabilities for the existing program of graduate and continuing medical education and health training."

There will be four basic types of AHECs established: rural, inner city, aged and adolescent/college health. The first actively functioning AHEC is in a rural setting, in Cumberland, a community in Western Maryland. The purpose of this center is to provide students with an opportunity to understand the valuable and rewarding benefits of delivering primary health care in a rural environment and of the contributions they can make toward the continuing improvement of such care in this or similar communities. As a result, it is hoped to influence the students' career choices positively toward practice in such a setting and, in the majority of instances, as primary health care providers.

Senior medical students may choose a rotation in Cumberland (and, in the future, at other AHECs) as one of their elective experiences in primary care. All internal medicine and pediatric housestaff in the primary care programs will serve a rotation in an AHEC location.



## INTERNATIONAL HEALTH PROGRAM

In accordance with objectives of the International Health Research Act of 1960, International Centers for Medical Research were created under the auspices of the National Institutes of Health to advance the status of international health. Congress further expressed the hope that "a program through United States universities for the early development of research and research training centers with adequate field opportunities for international studies" would be established.

Thus the office of International Research of the National Institutes of Health provided for the establishment of such a center at the University of Maryland School of Medicine in March 1961, to conduct scientific programs both in Baltimore, Maryland and abroad in Lahore, Pakistan.

The programs share these objectives:

- To conduct medical and paramedical research at the domestic and overseas sites.
- To provide research opportunities in international health problems for American physicians and allied professional workers, and their counterparts in Pakistan.
- To create, through scientific endeavors, an atmosphere of mutual understanding and friendship between Pakistan and the United States.

These programs provide opportunities for postdoctoral research in the fields of infectious disease—microbiology, medical entomology, epidemiology and parasitology. Current projects include mosquito biology, ecology and genetics, malariology and arbovirology. Often overlapping interests result in joint research projects. At present, projects involve collaboration with the following organizations or institutions: the Center for Disease Control (U.S.), the U.S. Agency for International Development, the U.S. Department of Agriculture, the U.S. National Museum, Auburn University, the University of Illinois, Gordon College (Pakistan), King Edward Medical College (Pakistan), the Institute of Hygiene and Preventive Medicine (Pakistan), the Pakistan Medical Research Council, the World Health Organization, the Imperial College of Science and Technology (England), and the Bureau of Quarantine (Philippines).

Appointments to the program are made at the research associate level. Upon acceptance into the program each research associate, with the aid of an advisor, devises a plan of research. Assignment to divisions and appointment to advisors depend upon the candidate's background, interests and the program's personnel needs. Following a basic orientation course, each research associate begins or joins an overseas research project, which frequently involves both field and laboratory work. Appointments are for one to three years.

Further inquiries should be addressed to the International Health Program, Room 519, Howard Hall.

## "TOWER I AND TOWER II"—NEW TEACHING FACILITIES

**John Eager Howard Hall.** The 14-story addition to John Eager Howard Hall which opened in the fall of 1976 provided the School of Medicine with an additional 176,347 net square feet of assignable teaching and essential research space. It houses the freshman and sophomore lecture halls, the Office of Student Affairs as well as other administrative offices of the dean, teaching laboratories, basic science and clinical department laboratory and faculty areas. The building is physically linked to two other major facilities—the hospital and original Howard Hall.

**Second Medical School Teaching Facility.** Commonly referred to as "Tower II", the ten-story building under construction at the corner of Pine and Baltimore streets, west of "Tower I"—John Eager Howard Hall, is scheduled for completion in the fall

of 1977. It too will contain clinical and basic sciences facilities, some of which are an expansion of existing departments currently housed in original Howard Hall, plus lecture rooms and administrative offices for the School of Medicine. The new facility will provide an additional 179,284 net square feet of assignable space.

## OFFICE OF MEDICAL EDUCATION

The Office of Medical Education was developed in 1969 as a consultative and research arm of the Curriculum Committee. In 1972 it was substantially expanded and reorganized and currently serves as a consultative unit to all departments of the medical school in the following areas:

- Instructional design, implementation and evaluation;
- Faculty seminars regarding new developments in instructional design and educational technology;
- Educational resources including audiovisual aids, instructional television and computer-assisted instruction;
- Development and implementation of computer-based instructional systems;
- Assistance and evaluation in curriculum development;
- Coordination of library facilities to include the storage and retrieval of all non-printed educational material and software;
- Investigation and utilization techniques for clinical teaching;
- Maintenance, distribution and operation of projection and related audiovisual equipment for use in teaching;
- Tutorial assistance and study skills;
- Classroom scheduling;
- Research in medical education.

## ILLUSTRATIVE SERVICES

The Department of Illustrative Services is a functioning component of the Office of Medical Education. The department supplies audiovisual aids to medical school faculty and staff for teaching, research and publication purposes. The primary services include illustration, photography, and offset printing.

**Illustration.** Services include comprehensive renderings of surgical and clinical techniques, anatomical renderings, statistical charts and other graphic representation, simple and comprehensive design and finishing of flyers, brochures, programs and posters. Also included are layout and paste-up for offset printing and photographic copying. In addition, this section is responsible for the design and finishing of displays and exhibits.

**Photography.** The division handles photographic copying of flat material such as written matter, x-rays, laboratory tracings and data; photography of specimens, equipment set-ups, surgical, clinical and laboratory activities; and portraiture for school-related purposes. The department is equipped for photomicrography (large and small format), slide duplication and motion picture photography. It further acts as a collection station for commercial processing of color photography by other departments.

**Offset Printing.** This section furnishes volume duplication and offset printing, through photographic enlarging or reduction involving either line or half-tone. The plant is equipped for finishing such as collating, folding, stapling, punching, cutting and padding.



## HEALTH SCIENCES LIBRARY

The medical, dental, pharmacy, nursing, and social work and community planning schools are served by the Health Sciences Library in a modern, four-story building. The oldest part of the library collection dates back to 1813 when the University of Maryland purchased books of Dr. John Crawford to form a medical library. In addition to the Crawford collection, the library contains more than 191,000 bound volumes and regularly receives over 3,000 scientific periodicals and annual publications. Thus, in providing literature to support the instructional programs and research efforts in five professional schools, the library makes available a wide range of materials to the medical community.

Computerized literature searches by MEDLINE, the National Library of Medicine's system, are provided for students, faculty and staff as part of the reference service at the Health Sciences Library.

During the academic year, the library is open 75 hours per week (six nights until 9:00 PM) with a staff trained to give reference service on duty most of these hours.

### LIBRARY STAFF

Mitten, Eleanor M., associate librarian and coordinator of readers' services, acting librarian; BS, Cornell University, 1942; BSLS, Syracuse University, 1949.\*

DeMange, Kathryn K., head, acquisitions; BA, Fresno State College, 1954; MLS, University of Maryland, 1967.\*

Dorfler, Melayn, head, documents; BS, Denison University, 1963; AMLS, University of Michigan, 1965.\*

Ellis, Claudia B., head, circulation; BA, Barnard College, 1972; MLS, Simmons College, 1973.

Hadlock, Robert L., coordinator of technical services; AB, George Washington University, 1950; MLS, University of California, Berkeley, 1958.

Hanna, Ruth E., information and public relations officer; AB, Hanover College, 1939; MSLS, Catholic University, 1961.

Jones, Margaret M., head, cataloging; AB, Shaw University, 1947; MSLS, Atlanta University, 1951.

Listfeldt, Hans-Guenther R., head, serials; BS, Loyola College, 1956; MSLS, Catholic University, 1964; PhL, 1967.

Listfeldt, Mary S., head, reference; BA, New York State College for Teachers, Albany, 1944; BLS, University of Wisconsin, 1947; MSLS, Catholic University, 1972.\*

Preslock, Karen, audiovisuals librarian; BA, Caldwell College, 1974; MLS, University of Maryland, 1975.\*

Richards, Katherine M., historical librarian; BA, Marylhurst College, 1964; MLS, Indiana University, 1968; certificate, Johns Hopkins University Medical Library, 1969.

#### *Emeritus*

Robinson, Ida Marian, AB, Cornell University, 1924; BSLS, Columbia University, 1944.\*

\* *Certified medical librarian*

# STUDENT LIFE



## OFFICE OF STUDENT AFFAIRS

The Office of Student Affairs is designed to provide students enrolled in medicine with guidance, advice, help, and administrative services. In addition, the office is responsible for monitoring student progress and advancement, registration, graduation, and all aspects of student life related to undergraduate medical school. To this end, the office employs one full-time associate dean and one full-time assistant dean, four part-time assistant deans, and a clerical staff.

While the entire staff is available to help all students in any area, some members also assume a specialty area within their overall functions. These specialty areas include minority affairs, senior elective year advising, student fellowships, national intern and residency programs advising, marital counseling, administration of the students' Vertical Advisory System.

**Elective Program.** The Office of Student Affairs compiles course offerings, arranges for advisors, schedules the ambulatory rotation, schedules courses and changes of electives, and provides for both evaluation of a student's performance during electives and evaluation of the electives taken.

**Office of Minority Affairs.** The office coordinates all activities concerned with the recruitment and retention of minority medical students. Some specific goals are to increase the number of minority students entering medical school and to provide all reasonable assistance necessary to facilitate their positive progress through the School of Medicine.

**Residency Advisory System.** The residency advisory system provides assistance in specialty career planning and guidance in the selection of suitable residency training programs. This service is available on an individual basis to all members of the junior and senior class.

**Marriage Counseling Service.** Because the Office of Student Affairs is dedicated to supporting the students in all areas of life so that they may function best academically, individual and group couple counseling is offered for couples in such areas as coping, finances, communication problems, medical stresses, and intervention in troubled relationships.

**Vertical Advisory System.** Students have the opportunity for close personal association with a team of faculty advisors and upperclass students during each of the four years of medical school. This advisory system, administered through the Office of Student Affairs, provides a helpful, ongoing interchange concerning academic, social, personal, and career problems and opportunities.

**Financial Assistance.** Information regarding the types of aid available to medical students is detailed in the financial information section.

## STUDENT GOVERNMENT

**Committee on Student Activities.** At present, a standing committee of the School of Medicine Council charged with the continued study of the health and general welfare of the students in the areas of health and safety, ethics, and financial aid has been replaced by regular meetings involving the deans, class officers, Student Council president, and student members of the Curriculum Committee which serve to focus on these needs.

**Judicial Board.** The medical school community operates under a general statement of ethical principles which are subject to periodic review by a Judicial Board. This board is chaired by a faculty member appointed by the dean and is composed of elected representatives from the faculty, the student body, and the housestaff. The board investigates any alleged infractions of the ethical code and conducts appro-



prate hearings. It reports its findings and recommendations to the dean, who presents an impersonal report of the decisions to the School of Medicine Council.

**Student Council.** This organization is recognized by the administration of the School of Medicine as the official representative body of medical, medical technology and physical therapy students. All students of these professions become *de jure* members of the student body at registration upon payment of the student activities fee. The Student Council members are elected by the classes of the student body with one representative per 50 members (or fraction thereof), the first representative being the duly-elected president of the class.

Duties of the Student Council are as follows: (1) to disburse monies from the student activities fund according to the council's financial disbursement guidelines; (2) to organize and administer the intramural athletic program, and (3) to define areas of schoolwide interest and to coordinate support for related activities through policy guidance, funding and promotion.

Each year the Student Council sponsors an intramural program for medical, medical technology, physical therapy and radiologic technology students. The events usually consist of interclass competition in touch football, basketball, softball and tennis. A ping-pong tournament and coed volley ball games are also regular events.

## STUDENT PUBLICATIONS

**Terrae Mariae Medicus.** The yearbook is published annually at the discretion of the medical school's senior class. Since 1896 the volume has provided a wide coverage of student life. The cost of the yearbook is included in the student activities fee.

**Aesclepian.** The student newspaper is sponsored by a student group such as SAMA or the Student Council. A student editor is paid by the sponsoring group to produce up to 18 issues a year.

## STUDENT ORGANIZATIONS

**American Medical Student Association. (AMSA).** The AMSA chapter at the University of Maryland School of Medicine is chartered as a member body of the national AMSA, an organization begun in 1951 to channel student activism into improving the delivery of health care in the United States. As such, its concerns encompass the entire spectrum of health issues, from manpower recruitment, education and utilization, to legislation and planning of innovative methods of raising the level of health care in the country. Membership is open to all medical, allied health professions and pre-med students on an affiliate basis. Nationally, AMSA offers students the opportunity to design, administer and participate in programs and projects which increase the student's awareness of the multiplicity of factors that determine "level of health." Locally, AMSA sponsors freshman orientation for the medical school, fosters social interaction among medical students and sends delegates to regional conferences and national conventions. Each year AMSA also selects the teaching faculty to receive the Golden Apple Award in recognition of their teaching excellence.

**Medical Mates.** Formerly WASAMA, it is a purposeful, non-profit organization whose membership includes spouses and friends of medical students, interns and residents. Sharing a common interest in medical school life and all its aspects, members meet to support one another and compare experiences by having speakers, discussions, service projects, and special events.

Medical Mates has taken an active role in trying to improve conditions for the students at the university. Annually, the organization compiles information about area housing which is distributed to all incoming medical students. Other assistance

has been in the provision of scholarship microscopes for students and the purchasing of many needed items for the hospital, such as the children's play area in the Family Health Center. Each summer, Medical Mates sponsors a microscope collection and sale day that enables rising juniors to sell their equipment and, at the same time, provides a much needed service to incoming freshman students in need of scopes.

**Student National Medical Association (SNMA).** The University of Maryland SNMA chapter was organized in 1970 by the minority students in the medical school. The organization's general goals are aimed at alleviating the crisis of health care delivery in minority groups of the American population by increasing the enrollment and decreasing the attrition rate of minority students in medical schools. A very specific goal of the national organization is a program directed at the problem of sickle cell anemia. On campus, the local chapter gives a voice to problems facing minority students in medicine in general, and at this medical school in particular. The group also provides pertinent activities and functions for the well-being of its members.

**University of Maryland Medical Society.** Established in 1972 as the "chapter body" of the Medical and Chirurgical Faculty, Maryland's state medical society, it is the means by which students may express their views on current medical issues to the parent organization. Each medical school in the state is entitled to two nonvoting representatives, juniors or seniors, to serve in the Med Chi's House of Delegates. At Maryland, this society elects these representatives and their alternates. Membership is open to all medical students.

**Family Practice Club.** In 1969, a group of medical students formed this organization to increase the awareness of the new specialty of family practice and to provide activities related to it. This is accomplished through the club's summer preceptorship program and its monthly meetings at which students interact socially with practicing family physicians in their discussion of topics of current interest in family medicine. The Maryland Academy of Family Physicians and the medical school's Division of Family Practice are both very active in their support of the club's activities.

**Alpha Omega Alpha.** The Beta chapter of Maryland was established at the University of Maryland in 1949. Medical students possessing outstanding qualities of moral integrity, scholarship and leadership are elected to membership in their third or fourth years. The society sponsors an annual lectureship, a forum for the presentation of medical student research and chapter meetings on topics of social, educational and philosophical interest to medical students and faculty.

## MEDICAL ALUMNI ASSOCIATION

"We, the alumni of the School of Medicine of the University of Maryland, desiring to further the interest and advancement of the University of Maryland School of Medicine and to perpetuate the associations made during the medical school period. . ." With that preamble to its constitution, the Medical Alumni Association set forth in 1895 to serve all graduates, students, faculty, hospital staff and physicians affiliated with the School of Medicine.

Continuing its purpose today, the association maintains up-to-date addresses of all graduates and establishes contact with them throughout the year by various mailings. Class reunions are organized every five years and held in conjunction with Alumni Day and graduation. Annual dues are used for operating expenses, support of medical school activities, and maintenance of the Student Loan Fund which the association established to help aid enrolled medical students experiencing financial hardship.

The association and the School of Medicine share in the sponsorship of *The Bulletin*, an informative, quarterly publication which is sent to all alumni and active members of the association.

The most ambitious project of the Medical Alumni Association is the plan to restore Davidge Hall, home to the association, to its original state as built in 1812. Davidge Hall has been declared a city, state and national historical site. When completed, Davidge Hall will be converted into a "living artifact"—one which symbolizes the beginnings and continuity of higher education in Maryland.

Inquiries and participation in the association are solicited from all affiliated with the School of Medicine. For further information, write: Medical Alumni Association, Room 201, Davidge Hall, 522 W. Lombard Street, Baltimore, Maryland 21201 or phone (301) 528-7454.

## STUDENT HEALTH SERVICE

The School of Medicine provides medical care for its students through the Student Health Service located in Room 145, Howard Hall. The office is staffed by a physician-director, assistant director, three internists, two psychiatrists, a gynecologist, three registered nurses and two secretaries. The care provided is an office-type of practice for those with illnesses or injuries not requiring hospitalization, but prevent the student from attending classes.

All students are required to have Blue Cross hospitalization insurance or its equivalent and must produce proof of such membership at the time of registration. A special Blue Cross-Blue Shield student policy is available to all students enrolled in the medical school. Detailed information regarding its provisions may be obtained from the Student Health Service.

The Health Service provides each new student with a physical examination, tuberculin test and chest x-ray as scheduled by the medical school. Abnormalities found during examination are discussed with the student. All students must pass the physical examination before final acceptance can be granted.

Prospective students are advised to have any known physical defects corrected before entering the School of Medicine in order to avoid absences during the academic year. Adherence to preventive medicine programs conducted by the Health Service (i.e., tuberculin skin test and chest x-rays) is required of all students, and is a mandatory part of registration.

The Health Service does not treat chronic conditions contracted by students prior to admission or extend treatment to acute conditions developing in the period between academic years.

A student's spouse or other members of the family are not eligible for Health Service care. In this regard, however, the Family Practice Health Center is available to family members desiring health care.

All students who register are required to pay a health fee at the time of registration. This fee covers all visits to the Health Service during the school year. Any necessary diagnostic studies will be at the expense of the student unless the studies are covered under the Blue Cross-Blue Shield or equivalent insurance.

## HOUSING

The University of Maryland at Baltimore is predominately a commuter campus. Most students locate housing in Baltimore or commute from their homes elsewhere in the state. Limited on-campus accommodations are available at the Baltimore Union and Parsons Hall Residence for Women for full-time, single students during the academic year.



The Coordinator of Student Activities Office, Room 108 of the Baltimore Union, assists students in locating off-campus housing as well as managing the two on-campus facilities.

During the summer months, rooms in the Baltimore Union are offered on a space available basis to students, faculty, and staff who are affiliated with the UMAB campus. The summer accommodations are on the 3rd, 4th and 5th floors of the Baltimore Union. The residence hall rooms are supplied with basic furnishings: desk, chair, bed, desk lamp, and dresser. No private baths, televisions, or air-conditioning are available in the rooms.

An apartment on the 2nd floor of the Baltimore Union is available for visiting guests for both long-term and short-term occupancy.

Application forms for housing may be obtained by writing to the Director of Housing, 621 West Lombard Street, Baltimore, Md. 21201.

## PRIZES

**Summa, Magna and Cum Laude Awards.** Certificates of honor are presented to those candidates for graduation who, during their academic four years, have exhibited outstanding qualifications for the practice of medicine.

**The Dr. Wayne W. Babcock Prize.** Each year a prize of \$50 is awarded to a graduating senior for outstanding work in surgery as a memorial to Dr. Babcock.

**The Balder Scholarship Award.** Each year a prize of \$500 is awarded for outstanding academic achievement to a graduating senior.

**The Dr. J. Edmund Bradley Prize.** Each year a graduating senior who has performed with special excellence in pediatrics is awarded a \$100 prize in honor of Dr. Bradley.

**The Louis, Ida and Samuel Cohen Award.** A scholarship of approximately \$500 is awarded annually to a member of the senior class and housestaff for recognition of superior scholarship, scientific knowledge in internal medicine, and human understanding and compassion for patients.

**Faculty Gold Medal.** Each year a medal is struck and presented to the graduating senior who in the estimate of the faculty has achieved the highest level of academic excellence throughout his or her undergraduate tenure.

**The Dr. Jacob E. Finesinger Prize.** A prize of \$100 is given each year in honor of Dr. Finesinger, late professor and chairman of the Department of Psychiatry, to the member of the senior class selected by the faculty who has done outstanding work in psychiatry.

**The Dr. A. Bradley Gaither Memorial Prize.** A prize of \$25, given each year by Mrs. Gaither as a memorial to her husband, is awarded to the student in the senior class excelling in genitourinary surgery.

**The Dr. William Alexander Hammond Award.** A prize of \$100 is awarded to a graduating senior who has performed with special excellence in neurology.

**The Dr. Leonard M. Hummel Memorial Award.** A gold medal and Certificate of Proficiency is awarded annually as a memorial to the late Dr. Hummel to the graduate, selected by the faculty, who has manifested outstanding qualifications in internal medicine.

**The Dr. Milton S. Sacks Memorial Award.** A prize of \$100 is given annually in honor of Dr. Sacks, late professor of medicine and hematology, to the senior selected by the faculty who has performed with special excellence in medicine and hematology.

**The UpJohn Special Achievement Award.** Each year a graduating senior who has performed with special excellence in social and preventive medicine is awarded a \$150 prize and a plaque from the UpJohn Company.

# ACADEMIC AND FINANCIAL INFORMATION



## ACCREDITATION

The University of Maryland is a member of the Association of American Colleges and is accredited by the Middle States Association of Colleges and Secondary Schools. The School of Medicine is accredited by the Association of American Medical Colleges.

## SALARY AND EMPLOYMENT INFORMATION

Students admitted to the University of Maryland School of Medicine can be assured of remunerative employment after satisfactory completion of the course of study and receipt of the degree, Doctor of Medicine. A high percentage of graduates enter the practice of medicine after completion of residency training. There appears to be a moderate excess of physicians in some disciplines of medicine and in some geographic areas. However, the overall need for persons holding the MD degree is such that all graduates of the School of Medicine may expect a satisfactory income.

## EQUAL OPPORTUNITY

The University of Maryland, in all its branches and divisions, subscribes to a policy of equal education opportunity for men and women of all races, creeds, and ethnic origins. The school has the objective of securing a broad racial, sexual and ethnic balance in its enrollment. To achieve this objective it desires to give every consideration to minority student applications.

## APPLICATION

The University of Maryland School of Medicine participates with the American Medical College Application Service (AMCAS) and all requests for a place in the first year class must be initiated by an AMCAS application. AMCAS application request cards can be obtained from AMCAS, Suite 310, 1776 Massachusetts Ave., NW, Washington, D.C. 20036, and the Committee on Admissions, University of Maryland School of Medicine, 655 West Baltimore St., Baltimore, Md. 21201. In addition, they are usually available from the premedical advisory office at the undergraduate college. AMCAS application material is usually ready for distribution about mid-June of the year prior to the year the applicant wishes to enter medical school.

For the School of Medicine, the AMCAS application is the first of a two-stage application process. The Committee on Admissions thoroughly reviews the AMCAS application and based on the information contained in it determines whether the second stage (School of Medicine) application form can be sent. An application fee to the School of Medicine is due only with the filing of the second stage application form. Every applicant will either be sent second stage application material or be informed that the committee cannot continue the application process.

It is very definitely in the best interests of the applicant that he file the application form and supporting credentials early in the application period. Please do not have supporting credentials sent prior to filing a final application.

It is the responsibility of the applicant to see that all required credentials and the completed application packet are filed with and received by the Committee on Admissions.

## APPLICANT SELECTION

Academic achievement, extracurricular activities, personal characteristics, recommendations from college instructors or the premedical committee, scores on the Medical College Admissions Test (MCAT) and personal interview are all carefully



considered in evaluating an applicant. Academic achievement and/or high scores on MCAT do not in themselves ensure acceptance. Of equal concern to the Committee on Admissions are the applicant's personality, character, motivation, sincerity of purpose and an assessment of the applicant as a potential physician. Communication skills, honesty, integrity, acceptance and carrying out of responsibility and involvement in activities in the area(s) of the applicant's interest(s) must also be demonstrated.

Matriculants are required to accept the provisions of the Judicial Board and agree to assume its obligations prior to registration.

Applications from persons with outstanding credentials from other areas of the United States and Canada are welcome and will receive all possible consideration. However, preference in the selection process is given to residents of the state of Maryland. Because of the large number of persons applying, applications can be processed only from citizens of the United States or Canada. A permanent alien immigrant is considered as being a citizen for selection purposes.

## ADMISSION TO FIRST YEAR

Careful attention should be given to choice of undergraduate electives, especially in the sciences. Usually the student should plan a four-year curriculum with a suitable arts and science major leading to a bachelor's degree. A major in an area other than science is quite acceptable although it is not our intention to divert students from a science major if this is their field of choice. The opportunity to place out of biochemistry by written examination is offered.

Applicants who choose a non-science major should take a sequence of science courses which demonstrate their academic ability to handle the demands made by a science-oriented curriculum.

A minimum of 90 semester hours of acceptable college credit is required exclusive of physical education and military science, earned in colleges of arts and sciences whose names appear on the current list of "Accredited Institutions of Higher Education" as compiled by the National Committee of Regional Accrediting Agencies of the United States. Applicants who will have earned a bachelor's degree in arts and sciences from an approved college or university before registration for medical school will be given preference over applicants who have not completed the requirements for the bachelor's degree. The only courses accepted are those which are approved for credit towards a degree by the university or college attended as well as the University of Maryland.

The following college courses and credits, at an acceptable level, are required before registering for medical school:

	Semester Hours
General biology or zoology	8
Inorganic chemistry	8
Organic chemistry	6
General physics	8
English	6

No more than 60 hours can be accepted from accredited junior colleges and then, only if these credits are validated by a college offering a Bachelor of Arts or Science degree.

A letter of evaluation is required from the undergraduate premedical committee for those applicants still enrolled in or recently graduated from undergraduate college. If there is no premedical committee, letters are requested from two science and one non-science course instructors. When letters from other sources are sent,

they should be only from persons who can candidly and critically evaluate the applicant's accomplishments, productivity and character. Consequently, such letters are usually from individuals who have supervised the applicant in some special experience in the applicant's area of interest or work. In any case, all letters of evaluation should be sent *directly* to the Committee on Admissions; they are *not* to be sent to AMCAS.

An evaluation of the applicant's credentials is made by members of the Committee on Admissions to determine if an interview is to be requested. This decision is based upon a composite estimate of the applicant's ability and future promise in the field of medicine as measured by his academic record to date, performance on the MCAT, recommendations of the premedical faculty, extracurricular activities, an assessment of the applicant's personal characteristics and the applicant's overall standing as compared to that of the other applicants applying that year. Such interviews must be scheduled in advance at the initiative of the committee.

The MCAT is usually taken in the spring and must be taken no later than the fall of the year preceding the year of entrance. Applicants should write the American College Testing Program, P.O. Box 414, Iowa City, Iowa, 52240, for further information and registration forms, or the Committee on Admissions.

In the selection process, the Committee on Admissions must use as the applicant's residency status that which is in effect on the last day applications can be received (December 31).

For further information regarding the admissions process in general, the applicant is referred to a booklet entitled "Medical School Admissions Requirements" which can be obtained from the Association of American Medical Colleges, Suite 200, One DuPont Circle, NW, Washington, D.C. 20036, at a cost of \$4.

## ADVANCED STANDING

Students who have attended medical schools in the United States are eligible to file application for admission to the second and third year classes only. Application must be made no later than April 15 of the year of desired admission. Applicants for advanced standing must meet the current first year entrance requirements in addition to presenting acceptable medical school credentials and a medical school record based on courses which are equivalent to similar courses in this school.

No student can be considered who has been dismissed from any medical school unless his former dean submits a letter addressed to the Committee on Admissions stating that the student is reinstated in good standing and eligible for promotion. No student can be considered who is not eligible for promotion at the time of transfer.

Persons who already hold the degree of Doctor of Medicine cannot be admitted to the medical school as a candidate for that degree from this university.

The School of Medicine cooperates with the Coordinated Transfer Application System (COTRANS) of the Association of American Medical Colleges. Further information about COTRANS can be obtained by writing: COTRANS, Suite 301, Association of American Medical Colleges, 1776 Massachusetts Ave., NW, Washington, D.C. 20036. All applicants who wish to apply to the School of Medicine for advanced standing on the basis of academic work completed at a medical school outside the United States or Canada, *must do so through the COTRANS procedure*. Such applications can be considered only for advanced standing into the third year. In addition to satisfying all eligibility requirements of COTRANS, the applicant must successfully complete Part 1, National Board of Medical Examiners. To apply under the COTRANS procedure, the applicant must register with COTRANS and also submit

an application form for advanced standing to the School of Medicine by June 1. It should be noted that strong preference is given to applicants who are residents of Maryland.

## GENERAL RULES

The university authorities reserve the right to make changes in the curriculum, the requirements for advancement and graduation, fees, and in rules and regulations whenever appropriate.

Students who report for classes later than one week after the scheduled time will be permitted to begin work only by permission of the dean. Attendance at all scheduled classes is expected.

Notice of change of address should be submitted promptly to the Dean's Office and to the Registrar's Office.

All new students, whether they are admitted to the first year class or with advanced standing, are expected to attend an orientation for new students.

## DETERMINATION OF IN-STATE STATUS

The Board of Regents of the University of Maryland approved new regulations for the determination of in-state status for admission, tuition and charge-differential purposes which became effective January 1, 1974.

As amendments may be made to these regulations, persons who are interested in obtaining a copy of the current regulations should write: Committee on Admissions, University of Maryland School of Medicine, Baltimore, Md. 21201.







## TUITION AND FEES

	Fall	Spring	Total
Application Fee*			
Matriculation Fee (new students)	\$ 15.00		\$ 15.00
Fixed Charges — In-State†	675.00	675.00	1,350.00
Fixed Charges — Out-of-State†	1,687.50	1,687.50	3,375.00
Instructional Resources Fee	15.00	15.00	30.00
Student Activities Fee	15.00	15.00	30.00
Student Health Fee	5.00	5.00	10.00
Hospital Insurance (Individual)**	65.88	65.88	131.76
Student Liability Insurance***	30.00	30.00	60.00
Supporting Facilities Fee	30.00	30.00	60.00
Dormitory Fee	339.50	339.50	679.00
Graduation Fee — Seniors		15.00	15.00

\*An application fee of \$15 should be submitted with the formal application to the School of Medicine. This fee will be applied against the matriculation fee for accepted students. A deposit on tuition of \$50 is required of all applicants before the expiration date specified in the offer of acceptance. The deposit will be credited against first semester charges. In the event of withdrawal before registration, the advanced deposit will be returned on request, if made before March 1.

\*\*Hospital insurance is required of all full-time students. A brief outline of the student health insurance program is furnished each student. Students with

equivalent insurance coverage must provide proof of such coverage at the time of registration and obtain a hospital insurance waiver. Rates are subject to change.

\*\*\*Student liability (malpractice) insurance is required of all students.

† Tuition charges listed are those for the 1976-1977 academic year as future charges were not yet determined at the time of publication.

## FEES

**Application and/or matriculation fee** partially defrays the cost of processing applications for admission and enrollment data in the professional schools. These fees are not refundable.

**Student health fee** is charged to help defray the cost of providing a Student Health Service which includes routine examinations and emergency care. Acceptable medical insurance is required in addition to the student health fee.

**Diploma fee** is charged to help defray costs involved with graduation and commencement.

**Instructional resources fee** is charged to provide supplies, materials, equipment and other costs directly associated with the instructional program.

**Student activities fee** is used to meet the costs of various student activities, student publications and cultural programs. The Student Government Association, in cooperation with the Dean's Office, recommends expenditure of the fee collected.

**Supporting facilities fee** is used for expansion of various facilities on campus that are not funded or are funded only in part from other sources.

**Fixed charges fee** meets a portion of the costs for the educational program and supporting services.

**Service charge** is assessed for dishonored checks and is payable for each which is returned unpaid by the drawee bank on initial presentation because of insufficient funds, payment stopped, postdating, or drawn against uncollected items.

For checks up to \$50 — \$5

For checks from \$50.01 to \$100 — \$10

For checks over \$100 — \$20

**Late registration fee** defrays the cost of special handling involved for those who do not complete their registration on the prescribed days.

No diploma, certificate, or transcript will be issued to a student until all financial obligations to the university have been satisfied.

The university reserves the right to make such changes in fees and other charges as may be necessary.

## REGISTRATION

Each student is required to fill in all registration materials and deposit them with the Office of the Registrar at the beginning of each semester. No registration is complete or official until these materials are deposited and all financial obligations are satisfied. Students who do not complete their registration, including the payment of their bill on the registration days, will be subject to a late registration fee.

One-half of academic yearly fees are payable on the date specified for registration for the first and second semesters. Blue Cross hospitalization for six months in advance is paid at the beginning of each semester. Fourth year students shall pay the graduation fee, in addition, at this time.

Any enrolled student may request at registration the postponement of payment of one-half his fixed charges for 30 days; all other fees are due and payable. For this service a charge of \$2.00 will be made.

If a satisfactory settlement or agreement for settlement is not made with the Business Office within ten days after a payment is due, the student automatically is debarred from attendance at classes and will forfeit the other privileges of the medical school.

## PRE-REGISTRATION

Pre-registration is offered to all currently enrolled students prior to the beginning of each semester. All students who pre-register incur a financial obligation to the university. Those students who pre-register and subsequently decide not to attend must notify the Office of the Registrar, *in writing*, prior to the first day of classes. If the request for cancellation is not received by this date, the university will assume that the student plans to attend and accepts the financial obligation.

Letters of cancellation received in the Registrar's Office after classes begin will be processed as withdrawals. Students will be liable for all charges applicable at the time of withdrawal.

## WITHDRAWAL AND REFUNDS

Students desiring to leave the School of Medicine at any time during the academic year are required to file a letter of resignation with the dean. In addition, an Application For Withdrawal Form bearing the proper signatures must be filed with the Officer of the Registrar. The student must satisfy the authorities that he has no outstanding obligations to the school and return his student identification card.

If the above procedures are not completed, the student will not be entitled to honorable dismissal and will forfeit the right to any refunds to which he would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is signed by the dean.

**Academic Standing.** Students who voluntarily withdraw during an academic semester will be given no credit. Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded at the Registrar's Office. Students who withdraw from the medical school and later desire readmission must apply to the Committee on Admissions unless other arrangements have been consummated with the dean's written consent.

**Refunds.** Students officially withdrawing from the school will be credited for all academic fees charged to them less the matriculation fee, in accordance with the following schedule from the date instruction begins:

- Two weeks or less—80 per cent
- Between two and three weeks—60 per cent
- Between three and four weeks—40 per cent
- Between four and five weeks—20 per cent
- After five weeks—0 per cent

**Leaves of Absence.** Students who are in good standing may be granted one year's leave of absence on request to the dean. Longer leaves can be arranged only under special circumstances with the exception of those students in the combined MD-PhD program.

## REQUIRED EQUIPMENT

**Dissecting Instruments.** At the beginning of the first year, all freshmen must possess a complete set of dissecting instruments similar to the ones on display in the bookstore.



**Microscopes.** All freshmen must also provide themselves with a standard microscope. All microscopes must conform to the following specifications:

1. For frequent and prolonged use, a binocular microscope is preferable to a monocular-type instrument and is therefore strongly recommended.
2. 10X oculars; wide field oculars are recommended, but not required.
3. Quadruple nose piece.
4. Four parfocal objective lenses, viz. —  
     30 mm., 4Z, 0.1 N.A.  
     16 mm., 10X, 0.25 N.A.  
     4 mm., 43X, 0.65 N.A.  
     1.8 mm., 97X, oil immersion, 1.25 N.A.
5. Mechanical stage to accommodate standard size microscopic slides; the stage need not be graduated.
6. Built-in, on-base light source; a variable transformer is recommended.
7. Substage condenser; Abbe or variable focus.
8. A carrying case is recommended.

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some of the older instruments are in poor optical or mechanical condition; and, in addition, some are equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard hemocytometer cover glass without breakage.

Based on the determination of financial need, first year medical students may qualify for loan of a microscope. See Financial Assistance section.

All microscopes will be checked during the first laboratory in histology.

**Other Equipment.** By the second year, medical students are required to have an ophthalmoscope, a blood pressure cuff, hemocytometer, and slit lamp. The estimated cost of these items, plus other essentials such as lab coats, is \$150 to \$200.

## FINANCIAL ASSISTANCE

The University of Maryland School of Medicine's financial aid program is available for medical students who demonstrate financial need. Through a varying combination of grants, scholarships, long and short term loans, and part-time employment, and, in some cases, loan of instruments and equipment, students may receive assistance in meeting educational expenses. In addition to the school resources, outside funding agencies make financial assistance available to qualified medical students.

An application for financial aid must be submitted annually, no later than March 15 to be considered for assistance for the following academic year. Applications of entering students will be considered only after the applicant has been accepted for admission. Entering students will be forwarded financial aid applications upon request to either the Committee on Admissions or to the Student Aid Office. Students currently enrolled in the School of Medicine may obtain forms from the Student Aid Office.

The amount of student assistance is determined on the basis of demonstrated financial need. Eligibility for financial aid is dependent upon the student maintaining good academic standing and full-time attendance. When determining the amount to be awarded, the financial aid committee considers the following: 1) the income, assets, and resources of the student and student's family; 2) support available to the student from non-university sources; 3) the costs reasonably necessary for full-time attendance at the school.

Renewal of financial aid for succeeding years is dependent upon annual sub-

mission and review of a financial aid application, good academic standing, the student's continued financial need, and the availability of funds.

### **MEDICAL SCHOOL FUNDS**

**State Grants.** These funds are allocated to the School of Medicine each year for the purpose of making grants to minority and disadvantaged students who demonstrate exceptional financial need. These awards may be renewed annually but are restricted to legal residents of Maryland.

**Dean's Scholarship.** On an annual basis, funds are provided for awarding grants to minority and disadvantaged students with exceptional financial need, and who need not be residents of Maryland.

**The Merck Company Foundation Student Aid Program.** On an annual basis, the Merck Company Foundation makes awards to medical schools in the United States to financially assist students from recognized underprivileged and low income populations. Awards are made on the basis of minority representation in each first year class. To be eligible for assistance under this program, the medical student must be a United States citizen from an impoverished background and demonstrate financial need.

**Robert Wood Johnson Foundation.** A grant was awarded to the university to provide assistance to minorities, women, and students from rural areas in their educational pursuits. From these funds, the School of Medicine has established a scholarship and loan program to assist eligible students in these categories who have demonstrated a great financial need.

**Private and Endowment Funds.** From bequests and private donations, the School of Medicine has established private and endowment accounts to provide fellowships, scholarships, and loans for students on the basis of their academic achievement and financial need. The amounts of these fellowships, scholarships, and loans vary and are awarded on an annual basis in accordance with school policy.

The availability of funds from each of the endowed accounts listed below is dependent upon the income generated. In addition, since many of these funds are governed by specific provisions set forth by the donors, awards must be made accordingly. A detailed description of the provisions for each fund is available through the Student Financial Aid Office.

- Avalon Foundation Scholarship
- Balder Scholarship Fund
- Israel and Cecelia E. Cohen Scholarship
- William H. Crim Scholarship
- A. Lee Ellis Scholarship
- Arthur Wright Erskine Scholarship
- John E. Esnard Fund
- Edward G. Field Memorial Fund
- Sharon Fox Scholarship
- Leon Frank Scholarship
- Laurence Gale Memorial Scholarship
- Harry Gudelsky Fund
- Horace Bruce Hetrick Scholarship
- Margaret A. Hicks Scholarship
- Hitchcock (Charles H. and Charles M.) Scholarships
- G. D. Jackson Scholarship
- W. Alton Jones Scholarship
- Leo Karlinsky Scholarship
- Emmett and Ruth Light Scholarship

Alex J. and Clara Maysels Scholarship  
 Arthur C. Palmateer Memorial Scholarship  
 Charles Pfizer Scholarship and Loan Fund  
 Henry Rolando Scholarship Fund  
 Morton and Elaine Schwartz Scholarship  
 David Street Memorial Scholarship  
 Arnold Tramer Scholarship Fund  
 Michael Vinciguerra Scholarship  
 Clarence Geneva Warfield Scholarship  
 John F. B. Weaver Scholarship  
 John L. Whitehurst Fund  
 Sara A. Whitehurst Fund  
 Randolph Winslow Scholarship  
 Henry Zoller, Jr. Scholarship  
 Balder Loan Fund  
 Jay W. Eaton Loan Fund  
 Foundation Loan Fund—Class of 1934  
 Gold-Steinberg Memorial Loan Fund  
 Isaac Gutman Loan Fund  
 W. K. Kellogg Loan Fund  
 William and Sarah Kraut Loan Fund  
 Michael H. Lipman Loan Fund  
 Joseph Lipskey Loan Fund  
 Marie K. Manger Loan Fund  
 Frank C. Marino Loan Fund  
 Medical School Council Loan Fund  
 Edward and Lina Meirhof Loan Fund  
 Memorial Loan Fund—School of Medicine, Class of 1916  
 Jessie Smith Noyes Loan Fund  
 Senior Class Loan Fund  
 Senior Class of 1945 Loan Fund  
 Christopher C. Shaw—Class of 1931 Loan Fund  
 Hugh R. Spencer Loan Fund  
 Webster M. Strayer Loan Fund  
 University of Maryland Class of 1938 Loan Fund  
 Wetherbee Fort Loan Fund  
 Women's Auxiliary of Montgomery County Loan Fund

**Microscope Loan Program.** Students demonstrating need may receive loan of a microscope as part of the financial aid award. Microscopes are loaned for a two-year period; a minimal annual maintenance fee is charged.

**Federal Funds—Health Professions Loans.** Loans are made to an annual maximum of \$2,500 plus tuition and fees. Loans made after October 1, 1977 will be at 7% annual interest; students graduating after June 30, 1979 are eligible only if able to demonstrate exceptional financial need. Repayment is deferred until the completion of residency training. Cancellation benefits are available.

**Federal Funds—Exceptional Need Scholarships.** Available only to first year students able to demonstrate exceptional need; scholarships may not be renewed. A \$400 per month stipend is provided for 12 months plus payment of tuition and fees.

**Federal Funds—College Work-Study Program.** The program permits students to gain employment on a part-time basis during the academic year. Employment opportunities are available both on- and off-campus.



## OUTSIDE SOURCES

Students are encouraged to consider financial aid resources available through sources outside of the School of Medicine. Each of the following programs requires a separate application; while application deadlines vary, most are in early spring.

**Armed Services Scholarships.** The Armed Services Scholarship Program, created by an Act of Congress (PL 92-426), enables a medical student to be commissioned as an officer in the United States Army, Air Force, or Navy. While attending school, the student remains in an inactive status and draws a stipend of \$400 per month, plus tuition and other academic expenses. Each year, all participants will be called to active duty for 45 days as a second lieutenant, drawing full pay and allowances for the grade and assigned to either clinical or professionally-oriented training. For further information, contact your local military recruitment office.

**Public Health Service—National Health Service Corps Scholarships.** In return for service after graduation, students receive a monthly stipend plus payment for tuition and other university charges. For further information, contact the Student Aid Office or the U.S. Public Health Service, Parklawn Building, Rm. 4-35, 5600 Fishers Lane, Rockville, Maryland 20852.

**Maryland State Scholarship Board—Professional Schools Scholarships.** Available to students demonstrating need and who have been Maryland residents for at least three years. Applications must be submitted to the board no later than January 15 for consideration for the following academic year. For further information, contact the Student Aid Office or the Maryland State Scholarship Board, 2100 Guilford Avenue, Baltimore, Maryland 21218.

**Maryland State Scholarship Board—Family Practice Scholarships.** The state of Maryland has authorized a number of scholarships to the University of Maryland School of Medicine for courses of study leading to the degree of Doctor of Medicine. Ten scholarships in the amount of \$1,500 each are awarded on an annual basis. Applicants must agree to practice general medicine for three years in an area of need in the state. For further details, contact the Maryland State Scholarship Board, 2100 Guilford Avenue, Baltimore, Maryland 21218. Applications must be filed by January 15 for the next academic year.

**National Medical Fellowship Program.** Entering students who are members of minority groups currently under-represented in the medical profession are eligible to apply. Awards vary in amount depending on the student's financial need and are normally awarded for the first two years of medical school. For additional information and application, write to: National Medical Fellowships, 250 West 57th Street, New York, New York 10019.

**Guaranteed Student Loan Program.** Many states sponsor a Higher Education Loan Program for students who are permanent residents. Post-baccalaureate students are eligible to borrow money under the program from their local banks or lending institutions in varying amounts up to \$5,000 per year. For applications and further information concerning deadline dates, students should contact the loan agency in their state of permanent residency.

Loans are repaid over a ten-year period after graduation and accrue interest at the rate of 7% per annum. Depending on the student's financial situation, the federal government may pay the interest while the student is in school. For students who are residents of the state of Maryland, applications and information are available in the Student Aid Office or from the Maryland Higher Education Loan Corporation at 2100 Guilford Avenue, Baltimore, Maryland 21218.

# PROGRAMS OF STUDY



## CURRICULUM

Broadly stated, the educational objectives of the School of Medicine are as follows:

- To educate students in a manner which will enable them to function at a high level of professional expertise and social awareness on a broad base of medical competency.
- To introduce the medical student to the concept of primary care of patients and to provide the medical student with sufficient opportunities to develop knowledge and skills for the delivery of primary care to the patient population.
- To provide opportunities for students at every level of training to pursue areas of special interest in depth, whether for intellectual stimulation or furtherance of a career choice.
- To encourage students to seek future medical careers in areas of need, whether these be professional or geographic.
- To train a variety of individuals to form the core of highly competent professionals who will practice medicine as generalists or specialists, teach full- or part-time, or continue to add to knowledge through research.

More specifically, the curriculum has been designed to meet medical educational contingencies as they arise. To this end, the faculty has established as a basic principle, continuous curricular review and has empaneled a standing Committee on Curriculum Coordination which is composed of year 1, year 2, and clinical year faculty chairpersons, special course chairpersons, faculty members-at-large, and representatives of the student body. This committee is charged with the responsibility of monitoring the curriculum and recommending changes whenever they are deemed necessary. The curriculum varies from year to year to meet changing needs of graduate medical education and health care delivery.

Potential students are advised that although the current curriculum is based on a five-day per week class structure, there is a strong possibility that future curriculum developments may necessitate a five-and-one-half-day (Saturday mornings) structure of compulsory attendance during the pre-clinical years I and II. Additionally, it should be noted that the current clinical years curriculum frequently involves weekend attendance. Furthermore, students should be prepared to spend a block of time in training sites out of the metropolitan Baltimore area during their stay in medical school.

**First and Second Years.** Recent curricular change has resulted in two four-month core sessions in each of the first and second years. During the months of January and June, elective courses will be taught with a minimum requirement of eight elective freshman/sophomore courses to be achieved by medical students prior to advancement into the third year. These elective courses may be taken during any one of the four minimesters at the student's and advisor's discretion.

During the freshman year, the following core courses are taught: Anatomy (including gross anatomy and histology), Biochemistry, Social and Preventive Medicine, Psychiatry, Physiology and Biophysics (combined), Genetics (interdisciplinary), and Neurosciences. In addition, students are exposed to a variety of subjects such as interviewing techniques, emergency medical care, normal physical diagnosis, specialty physical diagnosis, and intimate human behavior through the freshman year interdisciplinary course, Introduction to Clinical Practice.

During the sophomore year, students encounter the following core courses: Microbiology, Pathology, Pharmacology, Physical Diagnosis, Psychiatry, and Social and Preventive Medicine. Introduction to Clinical Practice is continued in the sophomore year including courses in legal medicine and medical ethics. Further-



more, there is an emphasis throughout the year on clinical correlation with combined instruction by basic science and clinical science faculty. This correlative teaching involves faculty of all the basic science departments in cooperation with the clinical scientists in order to provide the sophomore medical student with the full spectrum of the basic science foundation and the clinical science presentation of disease states.

**Third and Fourth Years.** A new clinical years curriculum has been instituted. This curriculum requires the student to spend a minimum of one summer between the sophomore and junior or junior and senior year taking clinical science courses at the University of Maryland School of Medicine. The two clinical years are viewed as a total unit with progressive patient responsibility on the part of the student. The first clinical experience consists of four 12-week rotations which are as follows: internal medicine; surgery; pediatrics and psychiatry; obstetrics/gynecology, radiology, and neurology. The student will take these four 12-week quarters according to a specific individual schedule. Course order for individual students will be based on logistical sequencing. The sum of these quarters provides a 48-week background introduction to clinical science.

Following this experience, the student will have a 24-week block that includes an eight-week elective period in which the student may pick one or two electives of his/her own choice. An additional eight weeks will be spent in a student internship in one of four clinical fields: medicine, surgery, pediatrics, or family practice. Here the student will be given an opportunity for primary patient care responsibility over a prolonged period of time. This rotation will generally be given at the University of Maryland Hospital, or, on occasion, at an approved affiliate. The third two-month segment will be a consecutive eight-week experience in an ambulatory setting. These outpatient settings will include internal medicine, pediatrics, family practice, and social and preventive medicine. In the additional free time, the student may audit available electives. The combined clinical years program equals the usual 72-week combination of the final two years but supplements the strong background of clinical science with a definitive opportunity for primary responsibility during the subsequent clinical experiences. It is hoped that this curricular change will better prepare the medical student for the increasing responsibility demanded by the new specialty residency programs which have been adopted throughout the country.

## GRADES AND PROMOTION

Official grades are designated by the following symbols:

H—Honors, completion of the course with exceptional performance

P—Satisfactory completion of a course

C—A nonpassing grade which must be remediated before advancement

F—Failure

When circumstances beyond a student's control make it impossible for him to complete a course at a usual time, he will be given an incomplete (I) until such time as he has completed the course. An "I" is in no way prejudicial to the final rating or grade of the student in the course.

Periodically throughout the academic year, the Advancement Committee convenes to review the records of all students in each class. The estimate of a student's academic status is based on academic achievement, his moral and ethical traits and general evaluation of his fitness for a career in medicine.

Students with one or more "F" or "C" grades, at the discretion of the Advancement Committee, may be allowed to remove them by: reexamination, repeti-

tion of the course, the semester, the entire year at the School of Medicine or the course at any school satisfactory to the department head, or may be dismissed.

Students who repeat a year and who do not show significant improvement in all courses may, at the discretion of the Advancement Committee, be dismissed. All "F" grades must be absolved prior to graduation.

The faculty reserves the right to determine if a student may withdraw, repeat, advance or graduate on academic or moral and personal grounds, including traits of character.

All discretionary actions of the Advancement Committee are subject to ratification by the School of Medicine Council and must be presented to this body at its next meeting.

## **INTERNSHIPS, RESIDENCIES AND FELLOWSHIPS**

Graduate specialty programs for interns, residents and fellows at the University of Maryland Hospital are approved by the Council on Medical Education of the American Medical Association and, in Dentistry, by the American Dental Association.

The approved intern (G-1) positions are filled through the National Internship and Residency Matching Program. Included are both categorical (rotating and straight) internships in anesthesiology, family practice, medicine, neurology, obstetrics-gynecology, pathology, pediatrics, rehabilitation medicine, and surgery.

Approximately 320 resident and fellowship positions are available in the following specialty areas:

Department of Anesthesiology: anesthesiology

Department of Dentistry: oral surgery

Family Practice Program: family practice

Department of Medicine: cardiology, dermatology, endocrinology, gastroenterology, infectious disease, internal medicine, nuclear medicine, and re-nology

Department of Neurology: neurology

Department of Obstetrics and Gynecology: obstetrics-gynecology

Department of Ophthalmology: ophthalmology

Department of Pathology: clinical and anatomical pathology

Department of Pediatrics: pediatrics and pediatric allergy

Primary Care Program: internal medicine and pediatrics

Department of Psychiatry: psychiatry and child psychiatry

Department of Radiology: radiology and radiation therapy

Department of Rehabilitation Medicine: rehabilitation medicine

Department of Social and Preventive Medicine: preventive medicine

Department of Surgery: general surgery, neurosurgery, orthopaedic, otolaryngology, thoracic and cardiovascular, and urology

Appointments to internships and residencies are made by the director of the hospital upon recommendations of the housestaff committee of the Medical Board or, in the case of residents, upon the recommendation of the appropriate clinical department chairperson. Correspondence and applications should be addressed to: Internships, The Director, University of Maryland Hospital, 22 South Greene Street, Baltimore, Md. 21201.

Residency inquiries should be addressed to the chairperson of the respective department or program at the same address.

## **ADDITIONAL EDUCATIONAL PROGRAMS**

**Baccalaureate Degree.** Selected students entering the School of Medicine from colleges which usually grant a baccalaureate degree after the successful completion of

the first year of medicine, are responsible for: (1) providing a certificate from the college or university certifying eligibility for this degree, and (2) meeting all requirements of the School of Medicine for advancement to the second year.

**Graduate Program.** Graduate courses and research opportunities leading to advanced degrees are available in most of the basic science departments of the School of Medicine. Students pursuing graduate work must be admitted to the Graduate School and meet the prerequisites of the Graduate School and the department. A catalog of courses and information concerning the graduate programs offered at the University of Maryland at Baltimore can be obtained from the Office of the Dean for Graduate Studies and Research, University of Maryland at Baltimore, Baltimore, Md. 21201.

**Combined MD-PhD Program.** Properly qualified medical students may elect to enter a combined educational program leading to the doctor of medicine and graduate degrees. Currently there are three approved MD-PhD programs: microbiology, School of Medicine (MMIC); pathology, School of Medicine (PATH); and pharmacology and toxicology, School of Pharmacy (PCOL). Other programs are undergoing reevaluation by the School of Medicine and the Graduate School. Interested students are advised to contact the individual departments or the Dean for Graduate Studies.

**Program of Continuing Education.** The University of Maryland School of Medicine is concerned with three phases in the education of physicians: undergraduate, graduate, and postgraduate or continuing medical education. Recognizing its responsibility to the people and physicians of Maryland, the medical school strives to make continuing medical education as meaningful and accessible to the state's physicians as possible. Such a commitment is fulfilled through the Program of Continuing Education, administered by the Assistant Dean for Continuing Medical Education and a full-time staff, with the assistance of the faculty committee on continuing education. The programs offered are approved by the American Medical Association for credit in Category 1, towards its Physician's Recognition Award. Courses and other educational activities sponsored by this program can also be used by a physician to meet the Maryland requirements for relicensure.

Continuing education is essential to maintaining the skills and competence of the physician in practice. All professions, but especially physicians, are called upon by society to continue to learn. The physician must rely upon continuing education programs to bring to his practice new medical knowledge as it becomes available. This is accomplished in a variety of ways including individualized continuing education (such as journal reading, audio cassettes, consultation, and preceptorships); hospital-based continuing education (rounds, conferences and other formal presentations in the community hospital); and formal lectures, seminars and workshops at the university's medical center. The reward the physician receives for his participation in these efforts, and the benefit to the patient, is continuing improvement in the quality of health care.

Dedicated to this philosophy, the Program of Continuing Education, in close cooperation with the departments and divisions of the School of Medicine, annually prepares a comprehensive program of continuing medical education activities to provide relevant and new information to Maryland physicians. To the greatest extent possible, the program is structured around the identified needs of practicing physicians. In order to better identify those educational needs, the program is working closely with hospital medical audit committees and with Professional Standards Review Organizations (PSRO's) throughout Maryland. By linking medical audit and peer review with an aggressive program of continuing medical education, the qual-



ity of medical care in Maryland hospitals is continually improved. Both the type and content of the instructional programs, as well as their instructional design, are varied in order to satisfy the learning needs of as many physicians as possible. A special effort is made to provide learning situations in the local hospital and other health care settings where the physician practices daily.

Through the Visiting Professor Program, the medical school provides continuing education opportunities in community hospitals where they are convenient and accessible to the practicing physician. These programs are often developed in response to the hospital's medical care audit activities. In addition, a wide variety of one to three-day symposia are presented each year on general and subspecialty topics of current interest. Other courses are also offered on the medical center campus and range from weekly Grand Rounds in the various major disciplines of medical practice to special evening refresher courses.

Another important effort is the opportunity given to the practicing physician who wishes to return as a trainee to the medical center. Through the Visiting Practitioner Program, physicians enter an individualized refresher course of graduate training for a limited period of time varying from one to several weeks.

Additionally, close cooperation with the Office of Medical Education makes the extensive audio-visual resources of the medical school available for use in continuing medical education programs, both on and off campus. The Office of Medical Education also provides for a lending library of audio-visual and other materials which can be used in individualized continuing education by practitioners throughout the state.

Close contact is maintained with the other providers of continuing medical education within Maryland. The development of a comprehensive statewide continuing medical education system is a high priority for the program as a mechanism for coordinating the various continuing medical education activities of the multiple professional societies and institutions involved in continuing medical education. The medical school is actively involved in the planning of programs with the Medical and Chirurgical Faculty of Maryland, the Maryland Hospital Association, and the Maryland Hospital Education Institute to assure that programs are responsive to physician needs.

# COURSE OFFERINGS



## ANATOMY

The Department of Anatomy provides instruction in the various aspects of basic medical science included under the general term "anatomy." Courses are offered to both medical students and to graduate students working toward a MS or PhD. The primary educational goal of the department is to provide basic understanding of the structure of the human body as related to function. Where relevant, important clinical and research applications of the material under study are described. The study of human structure includes all levels from gross morphology seen in the dissecting room, to fine structure as revealed with the electron microscope. Special emphasis is placed on the study of neuroscience where neuroanatomy is taught in an integrated format with neurophysiology, neurochemistry, neurobiology, and clinical neurology.

A knowledge of anatomy is essential to the proper understanding of clinical practice. Since anatomy is a broad and relatively precise discipline, there is a heavy demand upon each student's study time. Accordingly, the courses are designed to help students with their own learning process, as well as to provide a reasonably comprehensive treatment of the material under study. For this reason, both a theoretical and laboratory approach is adopted in course work, and materials are made available for individual study.

All full-time members of the department are actively engaged in research; the diversity of which reflects a wide range of interests, both pure and applied in nature. The faculty also offers a variety of advanced courses to medical and graduate students in the anatomical sciences.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MANA 505. Genetics.** This course is primarily designed for nursing students. Basic principles of human and medical genetics are stressed with attention given to underlying mechanisms of genetic disorders of man. Other areas developed are congenital malformations, developmental genetics, probability, and genetic counseling.

**MANA 511. Anatomy of the Human Body.** This course provides the student with a comprehensive understanding of the morphology of the human body. The basic concepts of structure as they are related to function are described in lectures and demonstrations. Laboratory facilities are provided for dissection of the human body and for the study of osteology and prosected material. The course includes instruction in living anatomy, embryology, roentgen anatomy and important clinical applications.

**MANA 512. Histology.** This course offers students a basic knowledge and understanding of the microscopic structure of the human body. The interdependency between structure and function in the different tissues and organs of the body is emphasized. Clinical and research applications of the course material are also stressed. Histological slides are provided for laboratory study.

**MANA 513. Neurological Sciences.** This course provides an integrated study of neuroanatomy, neurophysiology, and neurochemistry. The structure and function of the central nervous system is presented simultaneously. Facilities are provided for dissection of the human brain, examination of stained microscopic sections of various levels of the brain stem, and laboratory experience involving the study of functional aspects of the nervous system.

**MANA 514. Genetics.** This course comprises a series of one-hour lectures which include a basic consideration of the principles of genetics, population genetics, biochemical genetics, radiation genetics, immunogenetics and microbial genetics.



Laboratory facilities are provided for an introduction to the study of cytogenetics. Special emphasis is placed on the role of genetics in health and disease.

#### *Fourth Year*

**Electives.** Gross Anatomy and a number of special electives are available to clinical and preclinical students. These are listed in the graduate school and medical school elective catalogs.

## **ANESTHESIOLOGY**

During the first year the Department of Anesthesiology, in conjunction with various basic science and clinical departments, presents a series of lecture-demonstrations dealing with the practice of emergency medicine. In the second year the core curriculum in anesthesiology is presented as part of the "Introduction to Clinical Practice."

In addition, during the first two years the department participates in lectures, conferences and laboratory exercises of various pre-clinical departments. Such participation is intended to illustrate the application of basic science principles to the clinical practice of anesthesiology. Emphasis is placed on the physiologic and pharmacologic basis for pre-anesthetic medication, choice of anesthesia and the management of patients before, during and after surgery.

Electives of varying orientation and complexity are provided during all of the four years. These include clinical anesthesiology, obstetrical anesthesia, and critical care medicine. Further information and details concerning the elective courses may be found in the electives catalog or by contacting the department chairperson.

## **BIOLOGICAL CHEMISTRY**

Biochemistry is the subject that seeks to understand the phenomena of biology in terms of molecular structure and interaction. As such, it permeates all of biology and medicine and is a fundamental prerequisite to other medical sciences, especially pharmacology, microbiology and pathology, as well as the clinical subjects.

A teaching goal of the department is to present a concise but comprehensive lecture-conference course including as major subjects: proteins, enzymes, nucleic acids, intermediary metabolism of major food stuffs, energy production and utilization, chemical aspects of hormones, protein and nucleic acid biosynthesis and biochemical genetics. In addition, the introductory medical course includes a systematic series of sessions organized with the Department of Medicine which demonstrate the application of biochemistry to the understanding of human metabolic disorders.

Because some entering students have had a reasonably thorough exposure to biochemistry, the department offers a place-out examination during the first week of the freshman year.

In connection with the elective program embodied in the revised curriculum, a number of special seminar-conference topics are offered in both the January and June electives period. Details and description of course offerings can be found in the electives catalog. Additionally, students with special interests in biochemical investigation are encouraged to ask faculty members about opportunities for part-time or summer research. Limited funds have been available to support part-time research assistants from the medical classes.

The department also offers a doctoral program and a series of advanced courses (see Graduate School Catalog). Research interests of the staff include a number of areas in metabolism and enzymology (both mammalian and microbial), transport and membrane biochemistry, enzymology and regulation of melanin pig-

mentation, collagen structure and metabolism, hemoglobin biochemistry, genetics and morphogenesis of viruses, and regulation and synthesis of glycoproteins.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBIC 510. Biochemistry.** An introduction to the later preclinical and clinical subjects, the course is presented in the first semester and is oriented toward mammalian metabolism and enzymology and those aspects of general biochemistry common to all organisms. Conferences are offered throughout the semester. They allow enrichment of the core material and have the added advantage of smaller groups. A separate, but closely related course, correlative medicine, brings clinical correlation to the biochemical material in a series of weekly presentations of scientific clinical lectures, sometimes centering around a patient.

### *Fourth Year*

**MBIC 548. Research Elective.** This gives the student the opportunity to work with various faculty members in the following areas: 1) amino acid metabolism, collagen structure and metabolism, and amino acid racemases and epimerases; 2) biochemistry and genetics of virus development and assembly, as well as regulation of development; 3) physical-chemistry and chemistry of proteins; 4) microbial metabolism and physiology, as well as membrane transport of amino acids; 5) regulation of enzyme action by allosteric interactions; 6) melanin formation and its regulation in mammals; 7) membrane structure and function in microbial systems, and 8) membrane glycoprotein and phospholipid biosynthesis.

## BIOPHYSICS

It is the aim of the Department of Biophysics to provide medical students with a background in the physicochemical principles necessary to an understanding of physiology and the neurosciences.

The department offers a program of graduate study leading to the PhD degree. Study programs are flexible and depend on the preparation and interest of the student. Arrangements for a combined MD-PhD program are available on an individual basis.

Information regarding requirements, graduate courses offered, and research interests of the staff are available from the department at 660 W. Redwood Street, Baltimore, Md. 21201. Deadline for graduate applications is March 1.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBPH 510. Principles of Biophysics.** This course is given in cooperation with the Department of Physiology and is required of medical students. It is comprised of an introduction to cell physiology with special emphasis on osmotic and electrolyte balance in cells, as well as the processes underlying the generation of the membrane potential, the mechanisms involved in electrical excitation of nerve, and the transfer of excitation across synapses.

*Electives open to First, Second, Fourth Year Students*

**MBPH 511. Topics in Membrane Biophysics and Physiology Elective.** This course covers the following: 1) fundamentals of membrane permeability and transport; 2) enzymatic basis for active transport; 3) nerve excitation and conduction (cable properties and biophysical analysis); 4) muscle contraction and excitation-contraction coupling; and 5) selected topics of possible clinical significance.

**MBPH 512. The Application of Computers to Medicine Elective.** This program introduces the student to the uses of computers in the biosciences and medicine. Each student will have an opportunity to acquire experience using a terminal to interact with a computer. An introduction to the techniques needed to undertake digital simulation of physiological processes, statistical analysis, plotting and FORTRAN programming will be presented.

## **FAMILY PRACTICE PROGRAM**

Family medicine at the School of Medicine is considered to be a specific academic as well as a medical care discipline. Training for those interested in becoming family physicians begins soon after entrance into medical school, continues through the undergraduate curriculum, extends into an approved residency training program and is continued throughout the active practice years in special continuing medical education programs.

The goal of the Family Practice Program is to train family physicians to be specifically skilled to serve at the point of entry into the health care system. This training prepares them to accept responsibility for their patient's or family's total health care, in a continuing and comprehensive manner, regardless of age and within the context of any given environment. The total approach to medical care is stressed and includes preventive, prospective, episodic, emergency, inpatient, ambulatory, advisory, rehabilitative and counseling techniques.

The school provides an equal academic opportunity for all who choose family practice as a way of professional life by providing for an adequate program with a full-time staff of experienced family physicians, a sphere of clinical responsibilities, a model family practice setting and a "track" which medical students will be able to follow in the developing curriculum through the postgraduate years. Such a program is made possible by the extensive interdisciplinary teaching approach developed in conjunction with departments of internal medicine, pediatrics, psychiatry, obstetrics-gynecology, surgery, and many of their related subspecialty areas.

Teaching vehicles include the assignment of representative families, a model family practice partnership office, preceptorships, community hospital exposure, community health participation, controlled practice experiences, and research in basic health care.

## **UNDERGRADUATE MEDICAL PROGRAM**

### *Longitudinal Elective*

Introduced into the curriculum in 1976, this elective permits the student interested in family medicine to decide on and gain knowledge toward that career objective. Included in this offering are interesting field trips, seminars, panel discussions, and preceptorship experiences. Topics include historical medical perspectives; the economics of medicine; the humane approach to patient care; interrelationships between patient, family, community and physician/medical profession, to name a few. Throughout the four years of medical school, the student will assume responsibility for the welfare of a limited number of families.

### *Minimester Electives*

During the months of January and June, students may elect to spend time in the office of a selected family physician in order to gain knowledge of the health care system at that level. In this setting, the student may opt for patient care participation and/or engage in some health care research in that ambulatory population. (This elective is not available to freshman students in January.)



*Family Practice Preceptorships*

This elective enables the student to gain insight into the life style of a family physician in a community practice setting and further demonstrates what family practice involves. Here the student has the opportunity to see the scope of the work of the family physician and participate with the family physician as he encounters and manages the diverse problems seen in a busy family practice. The student has the unique opportunity to understand each patient in relationship to his family, his job, and his total environment. Additionally, it permits the student to understand the physician's place in society, his social and civic obligations and responsibility to patients. This elective is available for four or eight week periods, usually during the summer.

*Senior Elective in Family Practice*

Students will spend much of their time caring for families in the model family practice unit, the Family Health Center. They will have the opportunity to manage, under supervision, a multiplicity of problems typical of a busy family-oriented group practice. Other medical professionals are available for consultation and there is ample opportunity for coordinated, continuous care on a short-term basis. Field trips (which will augment the student's experience) are available by special arrangement.

*Senior Internship in Family Practice*

Beginning in July 1977, the Family Practice Program will offer an internship to senior students that will include eight weeks of instruction in the continuity of outpatient, inpatient, and extended care problem management techniques. Students will spend a portion of their time in the outpatient area with responsibility for a select group of patient/families. Another part of their time will be spent following and being primarily responsible for a select number of patients on an inpatient service. Additionally, they will have responsibility for a number of patients at a nearby extended care facility. They will be expected to take part in a rotation, under supervision, for night and weekend call.

**GRADUATE MEDICAL PROGRAM**

Maryland's three-year approved Family Practice Program is historically the third oldest in the country. Its goal is to provide a full breadth of family practice training that is required by the essentials of a family practice residency. Governed by these essentials and implemented by innovative educational methods is a philosophy designed to educate a physician in all aspects of modern family practice, as established in the "Core Content of Family Practice." Flexibility is built into the program to accommodate the specific need of the trainee and the basic health care needs of the community in which he or she will eventually serve as an individual practitioner or as a member of a group.

**CONTINUING EDUCATION PROGRAMS**

This phase of the Maryland program is based on the philosophy that the family physician's education must be a continuum throughout his or her entire career and for the additional purpose of preparing each graduate to successfully pass each recertification examination as required by the American Board of Family Practice.

A variety of continuing education programs is offered, ranging from short didactic courses to extensive in-depth courses in system-oriented clinical subjects, to tailored individual courses to fulfill the specific needs of a physician. Information on current and projected courses is available at all times from the Family Practice Program or the Program for Continuing Education.

## INTERNAL MEDICINE

Teaching the broad and specific principles of internal medicine to students and housestaff through patient care and clinical research is the department's main objective. This cannot be accomplished unless patients are studied thoroughly utilizing modern medical techniques which are conducted within an environment conducive to learning. Each subspecialty group is expected to practice the general principles of medicine and perform specialized research. When indicated for the intelligent study of patients' problems, new and specialized diagnostic procedures are provided, such as catheterization, endoscopic and isotope procedures, and application of specialized biochemical, microbiological or immunological tests.

In their teaching, attending physicians are expected to show the practice aspects of elaborating the medical history, perform a thorough physical examination and utilize definitive techniques which are often performed by consultative subspecialty teams. Rendering care to ambulatory patients in the medical clinics and emergency room is an aspect of practice upon which greater emphasis is placed. In the hospital and clinic settings, attempts are made to emphasize patient care and proper protection of the dignity of the individual.

## FELLOWSHIPS

**Summer Fellowships.** Students who have completed their sophomore year are encouraged to seek additional training during the summer months preceding their junior studies. This training may be obtained in one of several ways. A limited number of students are appointed to clinical clerkships on the medical wards of the University of Maryland Hospital. In these positions they are responsible, under supervision, for the history, physical examination, laboratory studies, and the progress notes of assigned cases.

In addition, a certain number of the medical subspecialty divisions provide specialized training for students as fellows during the summer months. The applicant is encouraged to apply directly to the division head. These fellowships enable the student to become acquainted with the various specialized diagnostic and research techniques, the clinical problems and therapeutic regimens peculiar to each of the medical subspecialties. Summer fellowships are available in the following divisions: cardiology (2); dermatology (2); endocrinology (2); gastroenterology (2); hematology (2); nephrology (2); infectious diseases (4); and clinical physiology (2).

Interested applicants should contact the respective division head prior to January 1 of the year in which the fellowship is desired. In many instances, a fellowship award is made providing remuneration for two or three of the summer months.

**Postgraduate Fellowships.** These are available in the various specialties of medicine. For details, see the specific division.

## UNDERGRADUATE MEDICAL PROGRAM

### *Third Year*

**MEDC 530. Clinical Clerkship.** This course consists of a clinical clerkship on the medical wards of the University of Maryland Hospital or the Baltimore Veterans Administration Hospital for a period of 12 weeks. Students are responsible, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases. They attend ward rounds and conferences in general medicine with the resident staff, attending physicians and chief of service. The clinical clerk is given instruction in the keeping of medical records including a modified

problem-oriented record. The student participates in a daily audit of the medical record with the medical housestaff which serves to provide more efficient hospital care.

#### *Fourth Year*

**MEDC 541. Medical Clinic-Adult Ambulatory Medicine Elective.** The student is offered two choices: 1) morning is spent in the adult medical clinic with responsibility for total patient care, and may spend the remainder of the day under the supervision of the medical admitting officer assisting the management of emergencies and urgent problems; or 2) morning is spent in the medical clinic and afternoon attending subspecialty clinic or clinics of his/her choice.

Students are assigned to the primary care clinics where they gain experience with ambulant patients, gaining insight into the importance of medical record, techniques of medical audit and the role of the allied health professionals such as the nurse practitioner and the clinical pharmacist in the delivery of health care.

### **Division of Cardiology**

#### **UNDERGRADUATE MEDICAL PROGRAM**

##### *Fourth Year*

**Clinical Cardiology Elective, University of Maryland Hospital.** Students participate in patient evaluation and examination under the close supervision of faculty members. Basic concepts of physical examination are stressed and correlated with both non-invasive and invasive techniques of more detailed evaluation. The rotation includes an opportunity for adult and pediatric cardiology training in the clinics, coronary care unit, and graphics laboratory with emphasis on complete patient evaluation, as well as the development of individual areas of interest.

#### **POSTGRADUATE FELLOWSHIPS**

Selected applicants participate in the activities of the division including responsibilities for cardiac catheterization, electrocardiographic interpretation, vectorcardiographic interpretation, phonocardiography, echocardiography, and exercise testing. The fellowships begin July 1 of each year and financial stipends are provided. Application is made through the head of the division and should be completed by November of the preceding year.

### **Division of Dermatology**

#### **UNDERGRADUATE MEDICAL PROGRAM**

##### *Third Year*

**DERM 530. Introduction to Dermatology.** Students are assigned reading on the more common skin eruptions. Nine two-hour clinical sessions are held for each quarter of the junior class. Individual instruction is given by one of the senior staff members emphasizing the pertinent aspects of differential diagnosis.

##### *Fourth Year*

**DERM 541. Dermatology Elective.** Emphasis is on the method of diagnosis and treatment of conditions in which skin eruptions play a major role.

#### **GRADUATE STUDIES**

The division is approved by the American Board of Dermatology for the three years of training which is required by the board for certification. Residents and fellows spend a part of the training period at the Rosewood State Hospital for Retarded



Children, Veterans Administration Hospital, Mercy Hospital, and in private offices of the members of the staff.

## Division of Endocrinology and Metabolism

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**ENDO 541. Clinical Endocrinology and Metabolism Elective.** The course provides seniors with a broad clinical experience that is accomplished through a four-week concentrated period of training devoted mainly to a study of patients with clinical disorders of endocrine function. Students assist with the day-to-day management of these patients under the supervision of a staff member. A separate elective of 12 weeks is also available to interested students who may desire a longer period of training and/or wish to pursue a clinical or laboratory research project.

**Affiliated Hospital Electives.** Electives in endocrinology are available at York (Pa.) Hospital and the Baltimore Veterans Administration Hospital.

### POSTGRADUATE FELLOWSHIPS

Full-time positions are available to selected candidates who have usually completed two or more years of house officer training. Fellows participate in ongoing research projects and independent investigations are encouraged. These trainees also participate in all clinical activities within the division. A financial stipend is provided. Applications may be made through the division head.

## Division of Gastroenterology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

An intensive two-week course on topics in GI is presented as part of the overall subject systems teaching portion of the curriculum.

#### *Electives*

The division at University of Maryland and Baltimore Veterans Administration hospitals offers elective experiences, both clinical and laboratory, to students at all levels in the medical school. Laboratory experiences generally require eight- to ten-week blocks of time; clinical experiences are limited to third and fourth year students. Any student may participate in weekly clinics at either University or the Baltimore VA Hospital for practical guided experience in the care of the GI patient or in the weekly GI conference held in rotation at the various hospitals.

### POSTGRADUATE FELLOWSHIPS

Two to four fellowships are available for those students who have completed training in internal medicine.

## Division of Hematology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

Members of the division are responsible for the first semester part (hematology) of the sophomore course in clinical pathology. Clinical and laboratory aspects of blood dyscrasias are covered with an introduction to blood group immunology.

*Fourth Year*

**HEMA 541. Clinical Clerkship in Hematology Elective.** As a clinical clerk, the student will participate in all clinical activities of the Division of Hematology and will be considered as an integral part of its staff.

**Hematology Elective, York (Pa.) Hospital.** Inpatient, as well as outpatient, consultations will be seen and appropriate diagnostic hematology procedures will be reviewed.

**POSTGRADUATE FELLOWSHIPS**

At least one full-time fellowship in hematology is available to applicants with a minimum of one year internship completed. A stipend is provided.

**Division of Infectious Disease****UNDERGRADUATE MEDICAL PROGRAM***Fourth Year*

**INFE 541. Training in Infectious Diseases Elective.** The diagnosis of infections and the proper management of patients with these diseases are taught by exposure of the student to practical, clinical, laboratory and research problems. The clerkship will include teaching rounds, both formal and informal, consultative rounds, research conferences, control of hospital infection, laboratory diagnosis, clinical research and laboratory research.

**Affiliated Hospitals.** Elective opportunities in infectious disease are available at both York (Pa.) Hospital and the Baltimore Veterans Administration Hospital.

**POSTGRADUATE FELLOWSHIPS**

The division sponsors four to six fellows who receive instruction in laboratory techniques and clinical investigation. A financial stipend is provided. Application is made through the division head.

**Division of Introduction to Medicine (Physical Diagnosis)****UNDERGRADUATE MEDICAL PROGRAM***Second Year*

**PDIA 520. Introduction to Clinical Medicine.** Early in the year, the entire class receives instruction in the techniques of elaborating the clinical history and in performing the physical examination. Small tutorial groups are formed under the direction of the instructor. During the first five weeks, experience in examination of normal individuals is given one afternoon weekly. An integrated lecture series is given by various members of the clinical faculty. During the remainder of the year, students become acquainted with abnormal signs through examination of hospitalized patients. This practical instruction includes children and patients with neurologic, ophthalmologic and chronic diseases with instruction provided by members of the departments of pediatrics, neurology, ophthalmology, and rehabilitation medicine. Members of the Division of Cardiology instruct physical examination of the cardiovascular system.

**Division of Nephrology****UNDERGRADUATE MEDICAL PROGRAM***Fourth Year*

**Nephrology Elective, University of Maryland Hospital.** Students who have completed their required junior electives in medicine, surgery, pediatrics and obstetrics

may elect a clinical rotation in nephrology. Although one month electives will be accepted, the student is encouraged to spend two months in order to have time to use the skills developed and to become thoroughly familiar with the approach to patients with kidney disease. Students with special interest in particular aspects of kidney function or kidney disease may be permitted to pursue those after consultation with the division head.

**NEPH 541. Nephrology Fellowship Elective, Maryland General Hospital.** This elective exposes students to the practice of clinical nephrology and to the management of acute and chronic renal failure.

### **POSTGRADUATE FELLOWSHIPS**

Qualified physicians may apply for full-time fellowships in nephrology. Although one-year fellowships of primarily clinical training are offered, preference will be given to those desiring two years of training.

## **Division of Nuclear Medicine**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Fourth Year*

**NMED 541. Nuclear Medicine Elective, York (Pa.) Hospital.** Basic instruction in radioisotope technique and applications to both diagnosis and therapy are presented which includes active participation in clinical evaluation of patients seen in a busy nuclear medicine department.

### **POSTGRADUATE FELLOWSHIPS**

Applicants must have completed internship and a minimum of one year of residency in medicine, radiology or pathology. The fellowship will be for not less than two years.

## **Division of Pulmonary Diseases**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *First Year*

Members of the division take part in the teaching of the physiology course with emphasis on the clinical application to basic respiratory physiology. This includes an introduction to clinical medicine and the sessions in the course on correlative medicine.

#### *Second Year*

During the subject systems portion of the second semester, a period of two weeks is devoted to the respiratory system. The teaching of clinical medicine is integrated with epidemiology, pharmacology, microbiology and closely correlated with the teaching of physiology and pathology. This does not attempt to provide a course in respiratory diseases but the most common and most important groups of diseases are included.

#### *Third Year*

During the rotation on medicine at the University of Maryland and affiliated hospitals (Baltimore VA Hospital, Maryland General Hospital and Mercy Hospital), junior students have the opportunity to make contact with faculty members and fellows during clinical ward rounds on patients with pulmonary disease. A weekly pulmonary conference is held at each of these hospitals where students have an opportunity to present cases from their wards.



*Fourth Year*

In the ambulatory care portion of the curriculum, senior students have an opportunity to spend one afternoon during each week in the Western District Chest Clinic. They see patients during the early part of the afternoon, present them to faculty members or fellows and attend a one-hour x-ray-oriented conference at which a wide variety of pulmonary problems is presented.

**PULM 541. Pulmonary Diseases Elective.** Experience is given in the areas of clinical medicine and applied physiology with emphasis on correlation of clinical, roentgenographic and physical findings.

## Division of Rheumatology

### UNDERGRADUATE MEDICAL PROGRAM

*Fourth Year*

**RHEU 541. Rheumatology Elective, University of Maryland Hospital.** The course is set up to provide sufficient basic clinical, radiologic and laboratory background in the field of rheumatic diseases. The student will be exposed to current clinical problems by way of consultations and routine outpatient clinics at the University of Maryland and Baltimore VA hospitals. Additionally, a monthly adolescent connective tissue clinic is held at University. Various aspects of treatment including drug therapy, physical medicine and rehabilitation, as well as orthopaedic surgery will be presented and discussed. The student will also be exposed to various diagnostic procedures such as arthrocentesis, clinical analysis of joint fluid and other diagnostic procedures currently available in the arthritis laboratory that are applied for clinical and research purposes. Rheumatology conferences are scheduled at the University of Maryland Hospital.

## MICROBIOLOGY

Training in microbiology within the medical school curriculum occurs primarily during the sophomore year when all students are required to take medical microbiology and immunology. In addition, a substantial number of seniors take clinical immunology during the elective portion of their training. Individual staff members provide instruction and guidance throughout the entire medical curriculum.

The department also offers the MS and PhD degrees. While the MS may be offered in special instances, priority for research facilities will be given to PhD aspirants. This department encourages students who wish to enroll in the MD-PhD program.

Emphasis is placed on the medical aspects of microbiology. Varied research programs are available and opportunities are open for experience in teaching and in diagnostic bacteriology and serology. Ecological studies on rickettsioses and arboviruses in overseas areas are also available for interested students.

### UNDERGRADUATE MEDICAL PROGRAM

*Second Year*

**MMIC 520. Medical Microbiology and Immunology (8).** First semester. Five lecture hours and seven hours in laboratory and group conferences per week. This course begins with an introduction to basic principles of immunology and then proceeds to consider the major groups of bacteria, spirochetes, fungi, rickettsiae, viruses and parasites that cause human disease. Emphasis is placed upon an analysis of the properties of microorganisms thought to be important in disease production, pathogenesis of infection and interaction with host mechanisms, epidemiology, and control measures.

### *Electives*

Students are encouraged to take elective work throughout their training. The following are specifically designed for medical students:

- MMIC 541. Clinical Immunology
- MMIC 542. Medical Zoology and Parasitology
- MMIC 543. Principles of Ionizing Radiations
- MMIC 548. Research in Microbiology

A number of graduate school courses are also available to qualified students. Interested students should contact the department for details.

## **NEUROLOGY**

Neurology is broadly, but properly, interpreted as the study of the nervous system including central, peripheral and neuromuscular systems. It includes basic and clinical aspects of the human nervous system, both normal and diseased. Accordingly, department members participate in planning and delivering course material in all four years of undergraduate medical education. While it is recognized that only a relatively small number of medical students will choose careers in medical or surgical neurology or in the basic neurosciences, it is believed that all medical graduates must have sufficient understanding of the basic structure and function of the nervous system to perform a satisfactory neurological examination, recognize and treat the many common neurological disorders and know when to refer the patient to a neurological specialist. Of special importance is the ability to distinguish between functional and organic neurological symptoms or signs.

While the organization of the postgraduate program of the department, as well as the interests and the abilities of the full-time faculty, are especially suited to the training of academicians and investigators, the department recognizes its responsibility also to train neurologists who will practice their specialty in this community and state.

The discipline of neurology has maintained its traditional ties with basic science and by its complex but logical nature, has typified the scholarly aspects of medicine. Recent methodological and scientific advances have created a new and therapeutically-oriented specialty which is represented in the philosophy and goals of this department.

## **UNDERGRADUATE MEDICAL PROGRAM**

### *First and Second Years*

**NEUR 510. Neurological Sciences I.** Lecture demonstrations of clinical cases constitute an integral part of this course. There is emphasis on correlation of anatomy and physiology with clinical material. Neurologic aspects of physical diagnosis are taught in both the first year and second year of medical school with instruction in performance of the normal neurologic examination as well as examination of selected patients with neurologic disorders.

**NEUR 520. Neurological Sciences II.** In conjunction with the Department of Pathology, and with contributions from other clinical and basic science departments, there is a correlative course given in the second year of medical school in which pathology of the nervous system is correlated with clinical disease.

### *Third Year*

**NEUR 530. Neurological Sciences III.** All members of the third year class have a three-week clerkship on the neurology-neurosurgery service at the University of Maryland Hospital. A didactic series of lecture-demonstrations is given by the neurology and neurosurgery faculty and students attend the combined conferences

in both disciplines. In addition, students attend rounds; may assist in the performance of some procedures; and, under housestaff and attending staff supervision, are responsible for the care of patients with neurological disorders.

#### *Electives*

**NEUR 541. Clinical Electives.** After completion of the third year, students are offered a variety of clinical experiences on the neurological service at: University of Maryland Hospital, Mercy Hospital, Montebello State Hospital, St. Agnes Hospital, Baltimore Veterans Administration Hospital, and York (Pa.) Hospital. The neurologic examination of the patient is emphasized, as well as the study and application of a wide variety of specialized neurologic diagnostic techniques. Each student will become proficient in the taking of a neurologic history, the performance of the neurologic exam, the formulation of a reasonable diagnostic impression or differential diagnosis, a plan of investigation and management for several of the more common neurologic problems.

**NEUR 548. Neurological Research Electives.** In all four undergraduate years, a limited number of students will have the opportunity to work with individual members of the department in the following areas: 1) cerebrovascular physiology; 2) neuromuscular research; 3) neurophysiology; 4) vascular ultrastructure (SEM and TEM); and 5) neurochemistry. The student will learn the principles and methods of investigating a problem. He/she will be involved with ongoing research and in some instances, especially with the longer electives, publication of results will be possible.

#### **FELLOWSHIPS**

Students who have completed their first, second or third years and have an interest in neurologic sciences may apply for additional training in clinical neurology or in one of the research laboratories of the department. Qualified students may receive remuneration as fellows for the ten-week fellowships taken during vacation periods.

#### **GRADUATE STUDIES**

There is a fully approved three-year training program in the specialty of neurology at University of Maryland Hospital. This provides for clinical training as well as rotation through the associated basic science disciplines. In addition, fellowships are available for subspecialty neurology training, such as EEG and EMG. For further information contact the department chairperson.

### **OBSTETRICS AND GYNECOLOGY**

The Department of Obstetrics and Gynecology emphasizes three areas of concern—education, research and service.

Educationally, the department provides a learning experience that encourages each student, regardless of ultimate career choice, to develop professional attitudes, diagnostic skills and knowledge relevant to the human female and to her sexual reproductive system. This experience enables each student to assume more effective responsibility for the general delivery of health care to the adolescent, adult and aging female and to the newborn.

The student is taught to recognize more accurately those patients who require special gynecologic consultation. He/she gains insight into such health-related social problems as family planning and other aspects of population control, sexual difficulties, sterilization, induced abortion and unwed pregnancies.

The educational material is presented in such a way as to familiarize students with all sources of knowledge relevant to these subject areas so that each may extend knowledge and skills in a direction and depth appropriate to current and



ultimate career goals. Attention is also directed to areas in which available knowledge is deficient with the attempt to stimulate the student to take advantage of elective opportunities in basic, clinical and social research.

The service roles focus on the general areas of obstetrical and gynecologic care. Obstetrics deals with a high-risk pregnancy population and provides excellent educational opportunities for both student and resident. Specialty clinics in endocrinology, complicated pregnancy, cancer, pre- and post-operative evaluation, and family planning provide specific, specialized areas of instruction in addition to rendering service to large numbers of patients. Cancer detection and therapy plays a major part in the gynecologic program.

The department is heavily committed to the use of audiovisual aids for the enhancement of the educational experience of both medical student and resident. The faculty also contributes to the postgraduate educational programs at University of Maryland Hospital and throughout the state.

## UNDERGRADUATE MEDICAL PROGRAM

### *Third Year*

**OBST 530. Clinical Clerkship.** Students are assigned to obstetrics and gynecology for a period of six weeks. As clinical clerks they participate in the original diagnostic studies, pelvic surgical procedures and post-operative care of hospitalized patients. Instruction in prenatal and gynecologic outpatient care is accomplished in the outpatient department. Seminars and departmental conferences with the attending staff and house officers are employed for teaching the art of correlating observations, diagnosis and therapy. Frequent and close contact with faculty staff is achieved by means of a preceptorial system which assigns a group of two or three students to a member of the faculty for the entire clerkship. As an alternative to the clerkship at the University of Maryland Hospital, a similar instructional program is offered to a limited number of students by the obstetrics and gynecology department at Mercy Hospital.

### *Fourth Year Electives*

**OBST 541. Obstetrics and Gynecology Elective.** The student may choose to rotate through a variety of areas within the department or may spend time more intensively in a specific area.

**Affiliated Hospitals.** Electives are available at: Maryland General Hospital, Mercy Hospital, South Baltimore General Hospital, and York (Pa.) Hospital.

## OPHTHALMOLOGY

The Department of Ophthalmology participates in the Introduction to Clinical Practice courses given in the first and second years. During the freshman year, emphasis is placed on achieving competence in performing an ophthalmological examination and emergency care for ocular problems. Self-instructional material is used to learn the technique of ophthalmoscopy.

During the sophomore year, the techniques necessary for a complete ophthalmological examination are reviewed. In addition, aspects of clinical ophthalmology are covered in small group discussions, plus self-instructional material.

Students interested in a more complete experience in ophthalmology may elect a clerkship during the senior year at the University of Maryland Hospital, Mercy Hospital, or Maryland General Hospital. Time is divided between outpatient, ward and operating room. Conferences and Grand Rounds are included in the program.

Students and physicians are encouraged to attend Grand Rounds on Tuesdays from 8:30 a.m. to 10:00 a.m., and to refer patients with ocular problems for examination. Discussion of differential diagnosis and possible methods of therapy are included.

### **GRADUATE PROGRAM**

A three-year residency program providing clinical training is offered at University of Maryland Hospital, with a rotation to Mercy Hospital. Appointment is by application to the Department of Ophthalmology, University of Maryland Hospital.

### **POSTGRADUATE PROGRAM**

Special courses for both non-specialists and ophthalmologists are given at various times throughout the year by the Program of Continuing Education.

## **PATHOLOGY**

The primary goal of the Department of Pathology is the better understanding of human disease with emphasis on mechanisms of disease and changes occurring at the subcellular level and in molecular terms. The student achieves this goal in three phases: 1) by acquiring the basic principles of pathology and applying those principles to the diagnosis and study of health care delivery as expressed in diagnostic areas such as surgical pathology, clinical pathology, cytology, forensic pathology and autopsy pathology; 2) by establishing a philosophy of critical evaluation and judgment concerning the problems of health and disease in humans; and 3) by developing feelings of personal responsibility and ethics for the practice of medicine.

The department's philosophy is that the study of disease includes both structure and function and is carried out from the level of the patient to that of the molecule.

The student is exposed to anatomical and clinical hospital pathology services with additional training at Baltimore Veterans Administration Hospital and Union Memorial Hospital. Research efforts of the department include: cell injury, cancer immunology, kidney structure and function, chemical carcinogenesis, cell immunology, red cell metabolism and chemical test methodology.

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Second Year*

**PATH 501. General and Systemic Pathology.** The course is designed to cover the essentials of pathology in such a way as to form a good foundation for the student's continuing medical education and is divided into "general" or pathobiology and systemic pathology. The course starts with the study of the basic principles of pathology as embodied in the areas of cell injury, inflammation, immunopathology, neoplasia, environmental and forensic pathology. This is followed by the study of the diseases of the various organ systems. Interdepartmental seminar-type presentations are given to cover broad areas of interest to various disciplines. Clinical input is given through correlative sessions stressing mechanisms of disease. The course consists of lectures, small group laboratories and seminars, presentations of fresh material in the autopsy room, presentation of museum cases, and clinical pathology laboratories. The course is divided into three parts. The laboratory sessions are in smaller groups under the direction of faculty members assigned to each student group. Each student will rotate through the various laboratories (clinical pathology, combined microscopic and gross, museum case analysis and review of fresh autopsy material). Sessions in the clinical pathology laboratories emphasize the acquisition of skills necessary for clinical laboratory analysis.

## ELECTIVES

Supplementing the core program are 20 course offerings for freshman, sophomore and senior medical students. These opportunities span a wide range of departmental activities from system-oriented courses such as in renal, pulmonary, introductory neurochemistry or cardiovascular pathology to task-oriented instructions such as environmental pathology and carcinogenesis. The latter is conducted with the aid of a number of guest speakers who are leading authorities in their fields.

Other courses are of more general interest such as seminars in clinical pathology or clinical clerkships in Baltimore area hospitals. Medical students also have access to courses in experimental pathology such as histochemistry, tissue culture or pathological biochemistry.

Most of the above mentioned courses, conforming with the 4-1-4-1 arrangement of the freshman and sophomore years, are offered in January and June while others are given during the regular semester as longitudinal electives. For course listing, time and content description consult the pathology section in the electives catalog.

**Combined Accelerated Program in Pathology (CAPP).** The CAPP admitted the first group of students in the fall of 1975 in an effort to permit early specialization and target-oriented education. The track in pathology begins in the freshman year, making use of all the resources of the Department of Pathology and is oriented toward a training in the specialty of pathology. Five students are admitted during their first year. They are required to fulfill all the requirements of the medical school program; however, they are not pledged to seek a career in the field of pathology. The training in the track program should provide the student with the knowledge of a one-year residency program. Time spent in training within the track program can count towards elective time.

## GRADUATE PROGRAM

**MS or PhD Degree.** The graduate program offers training and instruction in modern experimental pathology. Particular fields of interest presented are: instruction in pathological biochemistry, electron microscopy, immunopathology, histochemistry, tissue culture, physiology and the various fields generally considered within clinical pathology.

**MD-PhD Combined.** Interested students should consult the department chairperson. For details of course offerings and admission requirements, see the pathology section in the Graduate School Catalog.

## PEDIATRICS

The Department of Pediatrics plays a vital and dynamic role in the educational process at the undergraduate (medical school), graduate (residency) and post-graduate (continuing education) levels. In the education role, the department prepares the present and future physician to provide quality comprehensive medical care to children, now and in the future.

The department has broadened its concept of the children's physician to include not only the important generalist in pediatrics, but also the basic scientist, the health educator, the subspecialist, the medical center academician and the community health planner. Above all, the physician for children must be a sensitive human being which is summed up in the credo—Love, Concern and Excellence. The department's effort is to make the educational program meet the needs of the individual physician as well as to provide the best possible services for children.



A clinical clerkship experience is offered with inpatients, full-term infants and ambulatory patients in addition to a wide variety of elective experiences including basic research, clinical research, inpatient and ambulatory clerkships, preceptorships, subspecialty programs and community pediatrics.

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

**PEDI 510. Introduction to Pediatrics.** Presentations illustrating aspects of growth and development of infants, children and adolescents. The course also includes the approach to children in these age groups as well as a demonstration on how to perform a physical examination of a child in each age group. These are followed by small group discussions.

#### *Second Year*

**PEDI 520. Pediatric Physical Diagnosis.** Individualized experience in the performing of pediatric physical examinations and history-taking under the direct supervision of a preceptor is offered.

#### *Third Year*

**PEDI 530. Clerkship.** Students are assigned as clinical clerks for a period of six weeks at the University of Maryland Hospital, Mercy Hospital or Union Memorial Hospital. In each of the aforementioned teaching areas they are given clinical exposure and experience on the pediatric wards, in the pediatric ambulatory area and in the nursery area.

Regularly scheduled conferences are held covering x-ray diagnosis, cardiology, journal reviews, chart conference, neonatal mortality, case discussions and metabolic diseases. Small group tutorial discussions cover concepts of the pathophysiology and therapeutic management of pediatric patients. The total impact of the illness on the child and family complex is emphasized and the student is encouraged to become familiar with all aspects of pediatric practice.

#### *Fourth Year*

**PEDI 540. Pediatric Electives.** A variety of elective experiences are available including nursery, ward and ambulatory student internships, laboratory research experiences, and subspecialty experiences. Please refer to the medical school electives catalog.

#### *Minimester Electives*

The department offers a wide range of experiences that include basic science, clinical and laboratory research activities. For a complete listing, please refer to the medical school minimester catalog.

### PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

The department's objectives are to teach undergraduate medical students those principles underlying the distribution, metabolism, mechanism of action and toxicity of therapeutic agents or substances. At the graduate level, three areas of studies are incorporated: 1) training in the various aspects of pharmacology; 2) increasing effectiveness of drugs used in treatment of human diseases; 3) researching to better understand drug action.

The Graduate School Catalog lists a number of graduate courses and electives offered to medical students. Arrangements for combined MD-PhD training are made on an individual basis.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

**MCBP 520. Medical Pharmacology.** The pharmacological basic for therapeutics is presented with an emphasis on the mechanism of drug action.

### *Minimester Electives*

The department offers a variety of courses during the minimester portion of the curriculum. Consult the electives catalog for further details.

## PHYSIOLOGY

The Department of Physiology provides lecture, laboratory and seminar courses in the principles of mammalian physiology to students of medicine and advanced courses in special areas of physiology to graduate students, fellows and interested medical students.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MPHY 501. Principles of Physiology and Biophysics.** Lectures, laboratory and conferences during the spring semester. A course in the principles of human physiology and biophysics covering cellular, cardiovascular, renal, respiratory, gastrointestinal and endocrine physiology. Conference periods are used for clinical correlations and small group discussions. Under some circumstances, a limited number of students may elect an alternative program of laboratory work and/or library reading with written reports and conferences.

**MANA 513. Neurological Sciences.** See *Anatomy*.

**Other Opportunities.** A variety of minimester courses and advanced seminars or research in special areas of physiology are open to interested students during the elective period or other free time. Combined MD-PhD programs, requiring additional course work and original research, are offered for highly qualified medical students.

### *Fourth Year*

**MPHY 542. Seminars in Physiology Elective.** Advanced graduate seminars in selected fields of physiology (e.g., cardiovascular, renal, endocrine and neural) are offered, usually two each semester.

**MPHY 548. Research in Physiology Elective.** In selected fields.

## PRIMARY CARE PROGRAM

At the University of Maryland, the concept of the primary care physician is that of an individual who is: 1) skilled in multiple facets of health/illness care, both acute and chronic; 2) an educator of peers, pupils and public; 3) interested in the impact of health care delivery and able to effectively evaluate his or her own efforts as well as the efforts of others in this endeavor; 4) able to perform effectively in management decision-making and planning; and 5) an active participant in the affairs of the community.

It is the goal of the Primary Care Program to prepare such a physician, beginning with primary care elective experiences during the senior year, and continuing with an extensive graduate medical education program.

The Primary Care Program became an independent division of the School of Medicine early in 1976. This expanded program has responsibility and direct authority for planning, implementing and monitoring new primary health care delivery settings. It is an integral part of the overall campus thrust in primary health care.

## UNDERGRADUATE MEDICAL PROGRAM

Selected ambulatory primary care elective experiences are offered as part of the senior year ambulatory rotations in internal medicine and pediatrics. For further information, consult the Medicine and Pediatrics sections of the electives catalog. These primary care elective experiences occur both on campus and within the Area Health Education Center (AHEC) program off campus (see Resources section).

## GRADUATE PROGRAM

A primary care graduate medical education program in internal medicine begins in July, 1977. The goal of this residency program is the education and training of general internists who can be evaluated against the most stringent standards of quality in terms of their function as complete physicians. To meet this goal, a wide-ranging program has been created which allows for sufficient curriculum flexibility to meet individual needs. The full residency program is planned to cover a four-year period. Although the program could be completed in three years of intensive training, this would be at the expense of attaining optimal subspecialty skills. Future possibilities include a fellowship in primary health care.

The primary care residency program meets the requirements for certification of the American Board of Internal Medicine, as well as providing broad medical and managerial background.

In July 1978, an expanded primary care residency program in pediatrics will be operational. Information about this program will be available from the Office for Coordination of Primary Care Programs.

An integral part of the education and training experience in all of the primary care graduate programs is the focus on a true interprofessional relationship. Residents will have the unique experience of being associated with a team of health care professional educators, practitioners and research workers throughout the program. On campus, this faculty includes primary care nurse practitioners, clinical pharmacists, dentists and social workers. In addition, residents will be actively involved in teaching nurse practitioners, dental students, clinical pharmacy students and social work students.

## PSYCHIATRY

The goal of undergraduate psychiatric education is an understanding of and an appreciation for the application of behavioral and psychiatric principles in patient care and health maintenance through an exposure to a progressive sequence of intellectual stimulations, clinical experiences, and appropriate contexts of professional socialization. More specifically, the curriculum aims to assist the students to 1) acquire a foundation of knowledge regarding the psychological, sociological and humanistic aspects of the practice of medicine based on the study of the behavioral and social sciences and clinical psychiatry; 2) master basic interpersonal and psychiatric skills relevant to the management of patients with medical and/or emotional illness; 3) emulate attitudes and values which enhance the professional roles and practices of a physician *vis-a-vis* his or her patients and the community.

The curriculum is divided into a Core Program which consists of required courses offered during the first three years of medical education and an Electives Program which provides a variety of courses (clinical, didactic and research) for the student who is interested in furthering his knowledge and experience in some aspect of the theory and practice of psychiatry and its related fields. These elective courses are offered during the January and June minimesters of the preclinical



years, as well as during the eight-week elective time of the clinical years. The four-year Combined Accelerated Program in Psychiatry (CAPP) is offered as an advanced elective track to selected students with a special interest in the behavioral sciences.

## CORE PROGRAM

### *First Year*

**PSYH 510. Behavioral and Social Sciences.** (90 hours). This interdisciplinary course provides a context for the integration of diverse behavioral science contributions which are relevant to the understanding of human behavior. It is presented jointly by the Department of Psychiatry, the Department of Social and Preventive Medicine, and the Department of Pediatrics, and is coordinated by an interdepartmental committee. Its emphasis is on the emergence of a broader concept of life sciences that constitute medicine—one that views the human organism holistically as a dynamic biological system whose inherent aspects of structure, organization, ontogeny and functioning are determined or influenced by developmental, intrapsychic, interpersonal and socio-cultural factors. The course runs through both semesters (three hours per week).

*First Semester.* This section represents an integrated approach to the understanding of man along a developmental dimension, and in the context of the individual within his family. The central theme is man as an individual, viewed from a developmental, psychodynamic and socio-cultural dimension, and as he emerges through the vicissitudes of the family life cycle. Course units include "Human Growth and Development", "Personality", and "Family". These are lecture-demonstrations coupled with small group discussions.

*Second Semester.* This section views man in his transactions with the environment and in the context of larger systems, including social, governmental and institutional. Course units include "Behavioral Aspects of Health and Disease," "Social, Cultural and Organizational Aspects of Health Care," and "Life Stress, Emotions and Illness." The pedagogic approach is based on lecture-demonstrations and live patient interviews.

Students with an advanced standing in the behavioral and social sciences are offered the opportunity to take the following alternative courses: 1) Ethics in Medicine (first semester); and 2) Literary Themes and Clinical Parallels (second semester).

### *Second Year*

**PSYH 520. Introduction to Clinical Psychiatry.** (60 hours). The goal of the course is to provide students with a foundation of clinical knowledge as a preparation for their junior clerkship in psychiatry. In the first semester the focus is on psychopathology, including nosological classification, symptom identification and psychiatric diagnosis. Psychopathology is demonstrated by films, videotapes and interviews with live patients. The second semester includes psychiatric treatment methods, patient management, and selected topics in the areas of social and preventive psychiatry, forensic psychiatry, psychiatric epidemiology and history of psychiatry.

### *Clinical Years*

**PSYH 530. Psychiatric Clinical Clerkship.** (six weeks). Clerkship consists of full-time assignment to one of the following hospital facilities: 1) Institute of Psychiatry and Human Behavior, 2) Sheppard and Enoch Pratt Hospital, 3) Sinai Hospital, 4) U.S. Public Health Hospital, 5) Inner City Community Mental Health Center, and 6) V.A. Hospital, Loch Raven. All students are required to attend several didactic sessions on Tuesday and Thursday mornings, including: 1) "Review of Clinical Psychiatry"

(two-and-one-half hour weekly sessions), 2) "Review of Child Psychiatry and Development" (one-hour weekly sessions), 3) "Alcoholism and Drug Abuse" (one-and-one-half-hour weekly sessions). In addition, students are given the option to take an elective part-time experience in child psychiatry, ranging in length from half day per week to two days per week. Students selecting a child psychiatry option have proportionally less time in adult services. The following clinical facilities are used for child psychiatry electives: Child Psychiatry Clinic, Adolescent Clinic, Central Evaluation Clinic, School Day Care, Community Child Psychiatry, and Regional Institute of Children and Adolescents. Also, students are given the option for a field trip at the Spring Grove Hospital Center, the Rosewood State Hospital, Clifton T. Perkins Hospital, and various alcoholism facilities.

*Institute of Psychiatry and Human Behavior.* More than sixty per cent of the students are trained in this facility. The clerkship involves a concurrent assignment to the adult inpatient division, ambulatory care division, and liaison psychiatry division. The inpatient experience is structured around the assumption of responsibility for the work-up and treatment of a newly admitted patient under the supervision of a ward administrator and a resident preceptor. The student participates in staff meetings, milieu therapy activities, psychodrama sessions and pre-admission home visits and presents his or her patient in a clinical case conference. The outpatient experience involves intensively supervised work with patients in the brief therapy clinic and open clinic, supplemented by a students' clinical case conference. Concurrent liaison division activities include supervised work with patients in the general hospital.

*Sheppard and Enoch Pratt Hospital.* Three to four students per rotation. It focuses primarily on supervised work with hospitalized patients and includes participation in milieu therapy, group therapy and ongoing staff conferences. Students also have the opportunity to work in the crisis clinic and to participate in the consultative liaison program at the Greater Baltimore Medical Center.

*Sinai Hospital.* Two students per rotation. It involves a concurrent exposure to hospitalized psychiatric patients, consultative psychiatry, crisis clinic and outpatient clinic. Students also attend ongoing seminars and conferences.

*U.S. Public Health Hospital.* Two students per rotation. It combines inpatient and outpatient experience, under close staff supervision. Students also attend ongoing conferences.

*Inner City Community Mental Health Center.* This clerkship is in the process of being reorganized.

*V.A. Hospital, Loch Raven.* Two to four students per rotation. It involves an inpatient experience and consultative psychiatry in the Department of Medicine.

**Interdepartmental Collaborative Teaching.** Behavioral science teaching in certain specialized areas is contributed by several departments, including the Department of Psychiatry, within the interdisciplinary sequence Introduction to Clinical Practice (ICP). Behavioral science courses in the Year I ICP include: 1) Medical Interviewing (12 two-hour weekly sessions), 2) Human Intimate Behavior (13 two-hour weekly sessions). Behavioral science courses in the Year II ICP include: 1) Psychiatric Diagnosis (six two-hour weekly sessions on psychiatric interviewing, mental status, psychological testing and psychodynamic formulation), 2) Death and Dying, and 3) Medical Ethics. In the clinical years, the Liaison Division of the Department of Psychiatry conducts collaborative teaching in surgery, medicine, and ambulatory care. The Division of Child and Adolescent Psychiatry collaborates closely in teaching, research and patient care with the Department of Pediatrics.

## ELECTIVES PROGRAM

The Department of Psychiatry offers elective courses in all four years of the medical curriculum. Elective courses scheduled in the Year I and Year II minimesters (January and June) span a variety of topics in behavioral sciences, including: human development, psychophysiology, medical sociology and anthropology, experimental psychopathology, psychoanalytic theory, and psychiatric epidemiology. Elective courses offered during the clinical years include: brief psychotherapy, intensive individual psychotherapy, psychiatry for the medical practitioner, community psychiatry, study of violent behavior, outpatient child psychiatry, pediatric psychiatric consultation, preventive and community psychiatry for children, alcoholism and drug addiction, family dynamics and treatment, medical hypnosis, human sexual behavior, behavior modification, theory and research in psychosomatic medicine, problems in the delivery of health care, forensic psychiatry, and inpatient psychiatry electives. In addition, the department offers elective courses in various research areas, as well as individual clinical preceptorships.

**Combined Accelerated Program in Psychiatry (CAPP).** The CAPP was initiated in 1970 by the Department of Psychiatry as a major effort to explore new approaches to medical education. This behavioral science-psychiatry track allows selected students to enroll concurrently in a basic psychiatric-specialty training, beginning in the freshman year and continuing through the four years of medical school. In addition to participating in the psychiatry program, students are required to fulfill all of the requirements of a standard four-year medical curriculum. In admitting students to the program, there is no requirement for any pledge of a career interest in psychiatry. Students are selected from among applicants with an interest in the social and behavioral aspects of medicine. Twelve students are admitted to the program per year. Currently, a total of 70 students have entered the program. The track provides, from the first month of the freshman year, an unfolding progression of combined didactic and clinical experiences in the behavioral sciences and in clinical psychiatry. The completion of this four-year program enables the student to graduate from medical school with a foundation of knowledge and skills that is envisioned to be at least equivalent to that provided by one year of traditional residency training in psychiatry. Students in the program graduate from the medical school six months earlier than the rest of their class by being credited six months elective time in psychiatry. During the remaining six months, those interested in careers other than psychiatry are required to take a six-month internship in psychiatry specifically designed to meet their practice needs in the field of their choice. On the other hand, those committed to a career in psychiatry are required to take a six-month internship in internal medicine. Provisions have been made in the design of the program to integrate this undergraduate track with a two-year psychiatric training for those students who elect to complete their psychiatric training at the Institute of Psychiatry and Human Behavior of the University of Maryland. The CAPP allows track students to complete their basic medical and psychiatric specialty training in six years, and it can be further expanded to offer opportunities for subspecialization in child psychiatry or psychoanalysis, and for graduate training in one of the behavioral or biological sciences.

**Fellowships.** This eight-week program, supported by the National Institute of Mental Health and medical school traineeships, is offered each summer to a dozen students. Students are assigned to the various clinical facilities of the Institute of Psychiatry and Human Behavior and participate in an intensive program which includes closely supervised clinical work, conferences and seminars, and involvement in individual clinical and research projects.



## RADIOLOGY

Since Wilhelm Conrad Roentgen, a German physicist, discovered the x-ray in 1895, its use and that of other forms of radiant energy have been greatly expanded in our society. The greatest advances have been in medicine where the use of x-rays, radium, and other radioactive materials extend to all phases of patient care.

The Department of Radiology offers the medical student an opportunity for a broad base which touches on all aspects and subspecialties of medicine. This is accomplished through departmental teaching conferences as well as many combined conferences with other clinical departments. Case discussions in conjunction with videotape, slide, and motion picture presentations enhance the learning process in order to enable the student to apply his radiographic training to any field of medicine.

The department was established in the University of Maryland Hospital in 1911, the first such in a Baltimore hospital. In 1956, separate divisions of diagnosis and therapy were established with experienced diagnostic radiologists, radiation therapists, physicists and biologists, all of whom contribute to the educational program. The newest diagnostic techniques have been added including diagnostic ultrasound, xeromammography, and sophisticated neuroradiological procedures. New methods of teaching radiology, both as a separate and integrated discipline, are continually being explored and applied.

## UNDERGRADUATE MEDICAL EDUCATION

### *First Year*

**Radiologic Anatomy.** First semester. A correlated course is given in conjunction with the Department of Anatomy. This course consists of nine lecture-demonstrations devoted to the skull, chest, gastrointestinal tract, genitourinary tract, spine and joints. Not only is the normal anatomy shown, but the radiologic aspects of a few pathologic processes are also shown for emphasis and correlation.

### *Third Year*

**Radiologic Orientation I.** A series of nine lecture-demonstrations are given to students during their medicine rotation. Emphasis is placed upon pulmonary disease with radiologic-pathologic correlation stressed.

### *Fourth Year*

**RADI 540. Radiologic Orientation II.** Small groups of students are assigned for a period of two weeks to the diagnostic division of the Department of Radiology. Further subdivision allows individual instruction as the student rotates through the many subspecialties within the department including fluoroscopy, special procedures, neuroradiology, urography, pediatric radiology, and diagnostic ultrasound. Students attend all departmental teaching rounds and conferences as well as some joint conferences with other departments. Special lectures designed especially for the medical student are given twice daily by the faculty and residents within the department.

**General Radiology Elective.** For the student interested in a career in radiology, a flexible four-week course is available. The student is expected to investigate some aspect of radiology thoroughly, and, with the aid of a faculty advisor, present his or her material to the residents and staff.

## GRADUATE PROGRAM

A three-year residency is offered in both diagnostic and therapeutic radiology at the University of Maryland Hospital. The teaching program is carried out through pa-

tient care, under the supervision of a full-time staff, didactic lessons, and numerous teaching conferences.

## **REHABILITATION MEDICINE**

Rehabilitation Medicine is a broad term referring to the medical treatment and management of patients with disability due to neuromuscular and musculoskeletal impairments and the associated psychosocial and vocational elements. Physical medicine and rehabilitation is the medical specialty most intimately involved with "rehabilitation medicine" and concentrates on specific diagnostic and therapeutic skills required in the comprehensive evaluation of impairment and the application of appropriate therapy for its amelioration or the adaptation of the individual to the impairment.

The department has a multidiscipline structure containing appropriate elements of the allied health disciplines in addition to the specialist in physical medicine and rehabilitation (physiatrist). These are occupational therapy, physical therapy, speech pathology, social work, and vocational counseling. The department provides diagnostic, evaluative, therapeutic, and management services for the rehabilitation of patients of all ages who have in common some disorder of mobility. Its functions are frequently complementary to the activities of the other medical disciplines, and a bed service is maintained for those patients requiring in-hospital rehabilitation.

## **UNDERGRADUATE MEDICAL PROGRAM**

The department participates in several interdepartmental courses; namely, Introduction to Clinical Practice in the freshman and sophomore years, and Ambulatory Care in the senior year.

Elective clerkships in clinical rehabilitation medicine are offered in the sophomore, junior, and senior years, with the participation of Montebello Center, Sinai Hospital of Baltimore, and the Veterans Administration Hospital at Fort Howard, Maryland.

## **GRADUATE STUDIES**

An approved three-year residency program in physical medicine and rehabilitation is offered for those physicians wishing to specialize in this field.

## **SOCIAL AND PREVENTIVE MEDICINE**

The Department of Social and Preventive Medicine is concerned with the identification and solution of health problems of groups of people. Its basic sciences are epidemiology, biometry, and social and behavioral science. The variety of disciplines represented by the faculty is consistent with the department's broad range of activity in teaching, research and community service.

It is the strong belief of the faculty of the department that research and investigative assessment of clinical programs offers the student a perspective on ongoing exploration and self-assessment. A strong orientation towards the experimental investigation of theoretical and of practical therapeutic problems principally related to, but by no means confined to, cardiovascular disease exists. The experimental approach is a necessary complement to the collection of observational data which forms the basis for classical epidemiology. The Division of Clinical Investigation has been coordinating large scale cooperative clinical trials for a number of years. The total experience of the department, which spans all components from the gathering of data in the field to the advances in statistical theory related to ran-

domized clinical trials, is unique among schools of medicine and of public health, and has been recognized as the department's strong point. Collaborative research is another major commitment of the department, representing the application of departmental basic science expertise to the investigative programs of other disciplines and departments.

Through collaborative activities with the health departments and other public agencies, the department acts as an academic resource to serve the community needs. Under the auspices of faculty members of the department, the following programs have been instituted and developed: a systematic approach to the problems of geriatric health services; preventive medicine and public health focus on local and regional pediatric health activities; development of methods of improvement for the College Health Data System; a health assessment clinical program involving carefully researched risk-oriented health evaluation for UMAB employees and for other enrolled groups of urban employees; and a smoking cessation program aimed at high-risk population groups.

The departmental teaching programs span the four year undergraduate medical curriculum and continue through residency training and elective graduate education. The basic tenant is the development of an inquiring mind trained to use the scientific method in relation to the natural history of disease. In the preclinical years epidemiological methods are taught, together with biostatistical principles. The epidemiology of diseases is considered and the concepts of early detection, control and prevention are introduced. In the third year, faculty members teach in other clinical departments and act as role models stressing the principles of early detection and prevention. The senior students participate in the critical evaluation of competing treatment modalities and epidemiological methods used to establish priorities necessary for allocation of health care resources.

## **UNDERGRADUATE MEDICAL PROGRAM**

### *First Year*

Refer to Department of Psychiatry, First Year, for description of joint program.

### *Second Year*

#### **PREV 520. Social and Preventive Medicine.**

*Quantitative Medicine (30). First Semester.* The course presents concepts and methods of evaluation and interpretation of evidence; prepares students for subsequent course in descriptive and applied epidemiology; teaches the application of scientific method to clinical and population studies; presents the concept of biological variation and methods to describe and measure it; presents concepts of disease causation, and teaches fundamental principles of disease control. The course is presented by lectures, small group discussions, review of published papers and individual exercises.

*Clinical Epidemiology (32). Second Semester.* The epidemiology, natural history, risk factors, control and prevention of major selected diseases are taught by lectures and interdisciplinary seminars.

### *Fourth Year*

#### **PREV 540. Social and Preventive Medicine (48).**

##### *A. Clinical Preventive Medicine*

The clinical practice of the assessment of health and risk factors, and the maintenance of health is taught. Following an orientation session, students (approximately six per afternoon) will see patients in the Clinical Health Assessment Program. Students obtain a health and risk factor oriented history, perform a screening physical examination and make decisions on appropriate screening tests. Sub-



sequently, they see patients in follow-up visits to interpret findings and to provide counseling and education relating to health behavior and future screening, or to refer for treatment of disease. These clinical experiences will be complemented by seminars focusing on the identification of individuals and population groups to screen, the rationale for selection of appropriate procedures, the methods to assess patient risk and discussions on methods of health behavior modification, achievement of compliance, and risk factor reduction.

In summary, this section of the course will provide the graduate physicians experience and methods to answer the following questions: Who to screen? What to screen for and why? How to evaluate the screening results? What to recommend and how to carry out the recommendations? How to support the patient in efforts to maintain health?

This section will also stress the philosophy of screening with emphasis on its limitations, benefits and considerations for the best use of screening.

#### *B. The Physician and the Community*

The seminar series will occupy eight afternoons of three hours each and will be devoted to the discussion of professional organization; health manpower and community organizations; and the environment, with emphasis on occupational health.

1. Professional Organization section will discuss the following aspects: a) the components of the health care system, its operational efficiency, interaction of the health system with the community (the "anatomy" and "physiology" of health care); b) members of the health care team, their roles, education, distribution, and impact on health care; c) payment mechanisms and the relations to hospital and practice care, preventive measures, and compliance; d) up-to-date information on health insurance legislation and public resources; e) regulations and standards of medical practice emphasizing the legal aspects of organization, accreditation, licensing, and quality of care (the "physiology" of health care); and f) the legal consequences of an infraction of standards of failure of the system (the "pathology" of health care) including liability, infraction of standards, and revocation of license-responsibility of the medical profession and methods of professional disciplinary action.

2. Community Organizations and the Environment section of the series will acquaint the student with: a) the community components of the health care system and the manner in which they promote, impede, or interrelate with physician's activity; b) the practicing physician's responsibility to community organizations and the need for his or her input and guidance to local health planning, especially the allocation of scarce resources to health needs; c) the role of the medical society and its committees, in relation to local programs; d) environmental and occupational health risks and the physician's role in evaluating and reducing them; and e) the importance of the primary care physician in preventing and controlling infectious disease at the individual, family and community levels.

### **ELECTIVES**

The minimester elective program of the department has been developed to complement and round out the core material presented within the framework of the required curriculum. Electives include the following subject areas: issues in health care delivery; health services administration; health economics; principles of behavior modification; parent-child interaction and pediatrics; medical biostatistics; mathematical models-computer simulation; probability and its application in the biomedical sciences; methods for analyzing biomedical data; computer generation

and analysis of data; control of infectious diseases; clinical trials; selected topics in biostatistics; environmental and occupational health; geriatrics.

### **FELLOWSHIPS**

Individual elective clerkships in comprehensive and preventive medical care are arranged for senior medical students. Tutorials in the epidemiologic basis for diagnosis, management and prevention disorders in specified clinical specialties are arranged in coordination with the chairperson of the clinical department in which senior students elect clerkship. Summer fellowships in community medicine, preventive medicine and epidemiology are offered to 10-12 medical students. Research may be undertaken to study the components of the medical care system including community institutions or agencies relating to specified topics of interest, activities of private physicians, or special projects which are part of the department's activities.

### **GRADUATE AND POSTGRADUATE STUDIES**

The Department of Social and Preventive Medicine offers residency positions in each of three years of training in addition to postdoctoral fellowships. The department emphasizes five major areas: epidemiology, clinical trials, health program management, health service evaluation, and clinical preventive medicine. Each resident or fellow is given expert guidance in developing a program to provide him or her with an opportunity to develop professional expertise in preventive medicine. Joint residency programs, notably pediatric-preventive medicine, are being developed to qualify a candidate for board eligibility in two clinical specialties. Graduate training currently is available in several aspects of social and preventive medicine.

### **SURGERY**

The Department of Surgery is composed of six divisions: general surgery, neurosurgery, orthopaedics, otolaryngology, thoracic and cardiovascular, and urology. The faculty of the various divisions participate in the teaching of anatomy, pharmacology, physiology and introduction to clinical medicine, but do not offer formal courses until students enter their clinical clerkships. During this 12-week period, time is divided between general surgery and the subspecialties of orthopaedics, otolaryngology, and urology. Students may have clerkships at the University of Maryland Hospital or at one or more affiliated hospitals (Mercy, Maryland General, Baltimore City, South Baltimore General).

Electives in surgical research and summer fellowships are available to students in all four years. More extensive clinical experience with greater patient responsibility is offered by all divisions to students as electives in their fourth year.

The surgical clerkships give the student exposure to those disease entities which can or should be treated by operative intervention and to those physiologic and metabolic alterations which arise from such intervention. Students are expected to gain experience in recognition of conditions which will require surgical consultation and gain appreciation of wound care as well as familiarity with basic emergency procedures. This should enable the future internist, pediatrician or psychiatrist to discuss with his patient the probable treatment and prognosis of various surgical diseases, as well as giving students the opportunity to explore various surgical disciplines and to participate fully in the daily activities of surgical teams.

Graduates of approved medical schools will be considered for residencies in general surgery, neurological surgery, orthopaedics, otolaryngology, thoracic and cardiovascular, and urologic surgery.

## **Division of General Surgery**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Third Year*

**GSUR 530.** The teaching of general surgery is conducted in the inpatient environment of the University of Maryland, Baltimore City, Maryland General and Mercy hospitals. Students are divided into groups of two or three for continuous assignment to individual patient areas. Upon admission to the service, selected patients are assigned to individual students who are expected to record a complete history, the results of a physical examination and required laboratory studies. A differential diagnosis, final diagnosis and recommendations for therapy must be included. Operation room participation is encouraged but not required.

The program is designed to give the student a broad overview of the fundamentals of the discipline of surgery in a clinical environment and includes contact with a wide variety of adult and pediatric patients. This includes patients with infections, neoplasms, trauma, endocrine disorders, vascular disease, gastrointestinal problems, metabolic disorders and congenital defects often requiring extensive medical evaluation followed usually by surgical therapy.

The student is responsible for core reading material which is identical regardless of hospital assignment. Emphasis throughout the course is placed on problem solving through correlation of basic science information with clinical diagnosis and management.

#### *Fourth Year*

**GSUR 541. Elective Clerkships.** This elective allows the student to participate as an integral member of a surgical care team. Students are assigned to various services at University of Maryland Hospital in oncology, gastrointestinal surgery, vascular surgery, or pediatric surgery.

Surgical ward clerkships are available at the following affiliated hospitals: Maryland General, Mercy, Baltimore City, and York (Pa.).

A clinical clerkship is offered at the U.S. Public Health Service Hospital.

At Baltimore City Hospitals or York (Pa.) Hospital, electives are offered in the surgical emergency room and plastic and reconstructive surgery.

Consult the medical school electives catalog for course details.

### **GRADUATE AND POSTGRADUATE PROGRAMS**

A fully-accredited residency is offered at the University of Maryland Hospital and one affiliated hospital, Mercy. Additionally, research fellowships are available; and, for the practicing physician, short refresher courses are given.

## **Division of Neurological Surgery**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *First and Second Years*

In the first year, the staff participates in a combined program with the Department of Neurology in which correlative lectures and demonstrations are given and the fundamentals of the neurological examination are demonstrated. During the second year, a similar program is carried out that allows students to examine patients, followed by faculty review.



*Third Year*

In the third year, each student spends three weeks on a combined medical and surgical neurology rotation in which lectures are combined with clinical experiences gained on the two services. Opportunities are provided for observing neurosurgical procedures and participating in all the functions of the service.

*Fourth Year*

A fourth year elective is available in clinical neurosurgery in which the participation of the student is deepened, both in the operating room and in the daily performance of patient care. A preceptorship in pediatric neurosurgery is also available. Finally, students interested in microneurosurgery, the pathophysiology of spinal trauma and neurophysiology are welcome in the research laboratories of the division.

**GRADUATE STUDIES**

Rotations are offered to general surgery residents from the University and affiliated hospitals. A training program in neurological surgery is offered to graduates of accredited medical schools who have completed one year of surgical residency. The five-year program is accredited by the American Board of Neurological Surgery.

**Division of Orthopaedic Surgery****UNDERGRADUATE MEDICAL PROGRAM***Third Year*

**OSUR 530. Orthopaedic Surgery, University of Maryland Hospital.** The course is designed to teach the recognition and treatment of patients with acute fractures, including the severe multiple-injured patient, metabolic bone diseases, bone tumors, developmental and acquired deformities of the musculoskeletal system. Under supervision, students participate in patient diagnosis, treatment, and surgery. Daily conferences and didactic sessions are held.

**Orthopaedic Surgery, Baltimore City Hospitals.** Clinically-oriented courses in the principles and techniques of orthopaedic surgery are offered.

*Fourth Year*

**Electives.** One senior student is selected each month for an internship-level clinical and surgical experience. The student participates in the 10 weekly orthopaedic conferences and seminars. Additional clinical electives are offered through Kernan Hospital for Crippled Children, Baltimore City and Union Memorial hospitals.

**GRADUATE STUDIES**

The Division of Orthopaedic Surgery offers an accredited four-year residency program. A balanced program is achieved through cooperation with St. Agnes, a community hospital; Montebello State, a rehabilitation hospital; and James Lawrence Kernan Hospital for Crippled Children.

Elective rotations at other orthopaedic centers, both in the United States and abroad, are available in the fourth year of residency provided they are approved by the American Board of Orthopaedic Surgery.

**Division of Otolaryngology**

The division provides an introduction to the diseases of the head and neck. A wealth of opportunity is provided to the student who will be concerned with communication disability and the clinical diseases where hearing, speech and language are of diagnostic significance.

The entire staff with the assistance of the postdoctoral trainees provide each student by example, lecture and direct tutorial instruction, the essentials with which to enter residency in such fields as family practice, pediatrics, general surgery, neurosurgery, neurology, psychiatry and otolaryngology.

## **UNDERGRADUATE MEDICAL PROGRAM**

### *First and Second Years*

Introduction to the diseases of the head and neck is begun through interdepartmental arrangement with anatomy and physiology in the first year. Introduction to Clinical Practice provides freshman students in second semester with six hours of experience in the techniques of examination of the ears, nose and throat. During the second year, six hours of experience throughout the year allows more advanced examination of the head and neck.

### *Third Year*

Third year students are introduced to the core of patients with diseases of the ears, nose and throat. One hour of basic audiological technique is presented to each group by an audiologist and one hour of introductory speech pathology is presented by a speech pathologist.

Fundamental elements of otolaryngologic diagnosis and therapy are stressed in this program of approximately 14 days.

### *Fourth Year*

**Electives.** Electives are offered in the following areas: basic clinical otolaryngology, advanced otolaryngology, communication disorders, investigation in otolaryngology, physiology of hearing and surgical otolaryngology. For detailed course descriptions, consult the medical school electives catalog.

## **GRADUATE STUDIES**

Resident training in otolaryngology is open to four residents in each of the four years of the American Board of Otolaryngology-approved program.

## **Division of Thoracic and Cardiovascular Surgery**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Fourth Year*

**TSUR 541. Externship in Thoracic Surgery Elective.** Its main purpose is to present the basic pathophysiological principles of thoracic and cardiovascular surgery, a highly specialized and demanding discipline, in a clinical setting. The student becomes a member of one of the teams on the service and serves in the capacity of an intern. Duration of the course is four weeks with a maximum of 12 weeks available.

### **GRADUATE STUDIES**

The two-year residency program which admits two trainees each year is approved by the American Board of Thoracic Surgery. Applicants must be eligible for the American Board of Surgery examination at the start of the program. Residents are given an opportunity to assist and then perform all types of cardiothoracic operative procedures, including cardiopulmonary bypass, in a program designed to ensure progressive experience.

## **Division of Urology**

The urologic curriculum is designed to introduce urologic principles as they relate to preservation of renal function, cause and cure of urinary tract infection, mainte-

nance of a normal or acceptable voiding pattern, and disorders of the male reproductive system.

## **UNDERGRADUATE MEDICAL PROGRAM**

### *Second Year*

Lectures and demonstrations on disorders of urine transport are given in conjunction with the Division of Nephrology and the Department of Pathology during two weeks of instruction on the renal system.

### *Third Year*

**USUR 530. Junior Clerkship.** Five to seven students are assigned to the division for 14 days at the University of Maryland Hospital. Each is asked to review and follow a patient with a different urologic problem and to present this patient to the group and a faculty member. Daily rounds and conferences are held. The students observe and participate in diagnostic and operative procedures and attend the outpatient clinic. Each student receives a list of study questions, some of which are reviewed at faculty sessions each day. Outlines for each of the nine lectures are given to each student.

### *Fourth Year*

**Electives.** Students may elect an externship in urology at University of Maryland, Sinai, Maryland General and York (Pa.) hospitals or at Baltimore City Hospitals.

## **GRADUATE STUDIES**

The residency program consists of three years of training following a year as an assistant resident in surgery. Each year, three are appointed and become co-residents at the end of the third year if progress in training has been satisfactory.



# MEDICAL TECHNOLOGY PROGRAM



## PROGRAM

The University of Maryland offers a baccalaureate degree program in medical technology to be completed in four academic years. Students who have been accepted into the Medical Technology Program study during the senior year at the School of Medicine and University of Maryland in Baltimore. The program fulfills requirements set forth by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and the Council on Medical Education of the American Medical Association (AMA). Upon successful completion of the program, graduates are eligible to take the medical technology national certification examination given by the Board of Registry of the American Society for Clinical Pathology (ASCP).

## APPLICATION AND ADMISSION

Applicants must meet all admission requirements of the University of Maryland. At least three years of college preparatory mathematics and science, including chemistry and physics, are strongly recommended. Applicants must have a 2.5 grade point average (2.0 in science) and must take the Allied Health Professions Admission Test.

Applications to the professional school will not be considered until the first semester of the junior year. At that time, the applicant submits an undergraduate Professional Application for Admission. Requests for application should be submitted to: The Office of Admissions and Registrations, University of Maryland at Baltimore, Room 132, Howard Hall, 660 W. Redwood Street, Baltimore, Md. 21201.

Advancement to the professional segment is determined by criteria set by the Committee on Admissions.

## PREPROFESSIONAL CURRICULUM

Students must complete at least 90 semester hours of academic preparation, exclusive of health and physical education, before beginning the professional segment of the Medical Technology Program. The following curriculum guide, which fulfills University of Maryland and National Accrediting Agency for Clinical Laboratory Science requirements, will assist the student in planning the first three years of study.

### General Education Requirements

- A. Life sciences, agriculture, mathematics, science  
Satisfied by Medical Technology Program requirements.
- B. Behavior and social sciences (six semester hours)  
Select any six hours from listed divisional courses.
- C. Arts and humanities (12 semester hours)  
English (6) — one course must be Composition (MTP requirement)  
Speech (3) — MTP requirement  
Select an additional three hours from listed divisional courses.  
NOTE: Credit for foreign language will be given only upon completion of advanced course.

### Program in Medical Technology Requirements

- A. Mathematics (six semester hours)  
Introductory College Math (3,3): logic, sets counting, probability, sequences, elementary algebraic and transcendental functions and their geometric representations; linear equations, vectors, matrices; or equivalent;  
OR  
Introductory Analysis (3): real numbers, functions, coordinate systems; trigonometric functions and plane analytic geometry.  
*Recommended:* College level Statistics

**B. Chemistry (16 semester hours)**

Inorganic Chemistry with lab required (4)

Organic Chemistry or Biochemistry with lab required (4)

Select an additional eight hours from listed divisional courses.

*Recommended:* Biochemistry, Physical and Analytical Chemistry, Quantitative Analysis

**C. Biology (16 semester hours)**

General Biology with lab required (4)

General Microbiology with lab required (4)

Select an additional eight hours from the following: Anatomy and Physiology, Genetics, Comparative Vertebrate Morphology, Cellular Biology, Pathogenic Microbiology

*Recommended Electives:* Parasitology, Histology, Immunology

**D. Electives (to complete the 90 semester hour requirement)**

*Recommended:* Physics, Philosophy, Literature, Psychology, Sociology, First Aid

**PROFESSIONAL CURRICULUM**

Students are accepted into the Medical Technology Program on a competitive basis. Successful completion of 90 semester hours does not guarantee admission to the professional segment of the program.

The professional segment, of 12 months duration, is administered by the University of Maryland School of Medicine at the Baltimore Campus. Two classes are admitted each year (January and July). Full-time attendance is required during the senior year. The first six months of this year consist of lectures, didactic laboratories and simulated clinical laboratory instruction. The second half of the year involves rotation in each discipline of the clinical laboratories at the University of Maryland Hospital. Numerous members of the medical school faculty are closely involved in the Medical Technology Program.

**UNDERGRADUATE MEDICAL PROGRAM***Senior Year*

**MEDT 351. Clinical Chemistry Lecture (3).** This course provides future medical technologists with the necessary background material and information to function effectively in the modern clinical chemistry laboratory. The series of academic lectures is designed to teach the biochemical basis for the chemical determinations required by physicians in the diagnosis of disease. Material is organized in terms of organ function studies and is correlated with pertinent biochemical mechanisms. Normal and abnormal physiology are related to diseases and in discussion of each condition, those tests most helpful to diagnosis are repeatedly emphasized.

In addition to the fundamentals for clinical chemistry, a series of lectures in radiological safety and the handling of radioactive isotopes is included. The rationale for this latter consideration is the rapid development of that area of chemistry which utilizes radioactive materials for immunoassay.

**MEDT 352. Clinical Chemistry Laboratory (4).** The course consists of a series of lectures and laboratories designed to provide an intensive study of the qualitative and quantitative principles and procedures utilized in the chemistry laboratory. The significance of chemical reactions in diagnostic procedures and their relationship to the disease process are studied. Emphasis is placed on the interpretation, accuracy, precision and limitations of tests in the evaluation of organ functions. Statistics, population testing, and quality control in the laboratory are presented. The micros-



scopic observation and chemical analysis of urine is correlated with renal physiology and pathological processes involving the urogenital system.

**MEDT 353. Clinical Practice—Chemistry (5).** This period of instruction is included to enable the student to apply and perfect the procedures learned in MEDT 351 and 352. The instruction is conducted in a clinical environment and under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge and maximum proficiency.

**MEDT 361. Hematology Lecture (2).** This course is an introduction to the mechanisms of hematopoiesis and pathogenesis of hematologic disorders, as well as the mechanism of coagulation and practical applications in pathological processes. Lecture and discussion topics include the following: the origin, development and function of blood cells, methods of studying blood, anemia classifications and descriptions of mechanisms involved, disorders associated with the anemias, polycythemia, leukemia and leukemoid reactions, plasma cell and plasma protein abnormalities, lupus erythematosus, theory and mechanisms of hemostasis, hereditary telangiectasia, Von Willerand's disease, thrombocytopathy, and thrombasthenia.

**MEDT 362. Hematology Laboratory (2).** This course involves a study of techniques used in clinical hematology laboratories. Standardization of tests and equipment plus quality control are emphasized. Testing is performed in a simulated clinical laboratory setting on normal and abnormal samples taken from patients. Correlation of clinical disease with abnormal laboratory findings is presented by case studies and group discussions.

**MEDT 363. Clinical Practice—Hematology (5).** This course is a rotation through the clinical hematology laboratory which incorporates instruction and oral examinations in routine hematology, special hematology and coagulation. Applied professional experience includes the use of the most modern methods and instrumentation in the analysis of hematological and coagulation samples. Proficiency in manual and automated methods is required.

**MEDT 365. Immunohematology Lecture (1).** This basic course in immunohematology stresses the historical, practical and theoretical aspects of blood group serology. Emphasis is placed on the clinical manifestations of the blood group systems, their antigens and antibodies. Lectures and discussions include the following topics: history of blood transfusions, inheritance of blood groups, the ABO group system, the Rh blood group system, transfusion and compatibility testing, types and structures of blood group antibodies, the M, N, S and P blood group systems, other blood group systems, blood groups and transfusions, hemolytic diseases of the newborn, blood storage and immunology of tissue antigens.

**MEDT 366. Immunohematology Laboratory (1).** This is a clinical immunohematology course designed to expose students to the general conditions of the modern blood bank service. Laboratory experiences involve the following areas: equipment and basic procedures employed in blood banking, quality control in blood banking, problems relating to the common blood antigen systems and their associated antibodies, donor processing and blood administration, prenatal and postnatal studies, medico-legal use of blood types, transfusion reactions, atypical antibody identification, HAA screening and blood component therapy.

**MEDT 367. Clinical Practice—Immunohematology (5).** This course consists of applied professional experience in a clinical blood bank laboratory. Instruction and oral examinations are given at the bench in routine and specialized areas of the modern blood bank. Students enrolled in this course are expected to demonstrate a high level of proficiency in all areas of blood banking prior to completing the course.

**MEDT 371. Clinical Microbiology Lecture (4).** The objective of this course is to acquaint the student with the role of microorganisms in the diseases of man. Emphasis is on the differentiation and culture, clinical manifestations, infectious processes and epidemiological aspects of bacteria. Included is an introductory study of the classification, morphology, and identification of the pathogenic fungi, as well as systematic review of the morphology, life cycle, disease process and identification of human parasites. Some consideration is given to the characteristics and properties of viruses and rickettsiae and the concepts governing their pathogenicity, immunity, epidemiology and identification. Instruction in immunology includes the study of theories of antibody production and principles of immunological reactions to infectious and non-infectious agents.

**MEDT 373. Clinical Practice—Microbiology (5).** This course involves a period of instruction which enables the student to apply and perfect the various microbiological techniques learned in MEDT 371 and 372. This instruction is conducted in a clinical environment under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge in laboratory procedures.

**MEDT 381. Electronics and Instrumentation Lecture (1).** The course is designed to acquaint the medical technology student with the basic principles of electronics and to introduce instrumentation widely used in the clinical laboratories. The first portion of a series of 15 lectures deals with basic electronic principles that aid the student in constructing a better understanding of instrumentation. The remaining lectures discuss theory and elementary principles of operation of a wide range of instrumentation used in clinical laboratories, including: spectrophotometry-visible, ultra-violet and infra-red, flame analysis, fluorometry, nephelometry, electroanalytical chemistry, colligative measurements and chromatography.

**MEDT 382. Electronics and Instrumentation Laboratory (2).** This course provides medical technology students with a practical and workable knowledge of electronics in order to better understand, operate, trouble-shoot, and maintain the instruments currently used in clinical laboratories. The series of 15 lectures and 15 laboratories is designed to teach principles of electronics and the application of these principles of instrumentation. Supplementing the instructional theory of MEDT 381, each student has the opportunity to operate and trouble-shoot a wide variety of instruments including spectrophotometers, visible and ultra-violet, flame photometers, fluorometers, osmometers, and thin layer and gas chromatographic systems.

**MEDT 386. Clinical Pathology (2).** This course is a study of normal and pathological tissue in addition to the histological and chemical methods for tissue identification. Special staining techniques and selected histological cases are studied.

**MEDT 395. Medical Technology Seminar (1).** This course is oriented towards the role of today's medical technologist in relation to changes in medicine. Problems in laboratory management, administration and research techniques are presented.

## FACULTY

### *Program Director*

Masters, Jason M., Associate Professor; BS, High Point College; MS, Sul Ross State; PhD, University of Maryland.

### *Education Coordinator*

Hill, Elizabeth S., BS, MT (ASCP), Instructor, University of Maryland; BS, Temple University.

*Associate Professor*

Jiji, Rouben, MD, Royal College of Medicine, Baghdad, Iraq.

Knoblock, Edward C., AB, Western State College of Colorado; MS, University of Maryland.

*Assistant Professor*

Gonzalez, Karen H., BS, MT (ASCP), University of Maryland; MS, University of Maryland.

Libonati, Joseph P., St. Joseph's College; MS, Duquesne University; PhD, University of Maryland.

Wilde, Kenneth D., BS, Kutztown State College; MS, University of Maryland; PhD, University of Maryland.

*Instructor*

Baker, David C., BS, Kansas State University; MS, University of Missouri.

Brueck, Lynne, BS, MT (ASCP), Mississippi University for Women; BS, University of Southern Mississippi; MS, candidate, University of Maryland.

Harmening, Denise M., MS, MT (ASCP), BS, University of Maryland; MS, University of Maryland.

Lucas, Carolyn C., BS, MT (ASCP), College of Charleston; MT, Medical University of South Carolina; MAT, The Citadel.

Park, Jongsei, MS, Johns Hopkins University; PhD candidate, Johns Hopkins University.

Reese, Joan L., AB, MT (ASCP), Dunbarton College of Holy Cross; MEd, Shippensburg State College.

Walsh, Dolores C., BS, MT (ASCP), Mt. St. Agnes College.

*Clinical Faculty*

Tigertt, William D., Professor and Medical Director; AB, Baylor University; MD, Baylor University.

Rasmussen, Peter, Professor and Laboratory Director; MD, Temple University.

Anthony, Ronald L., PhD; Assistant Professor and Director of Clinical Immunology.

Dawson, R. Ben, MD; Assistant Professor and Director of Blood Bank.

Smith, Andrew G., PhD; Associate Professor and Director of Microbiology.

Valigorsky, Jon M., MD; Assistant Professor and Director of Clinical Hematology.

*Clinical Teaching Staff*

Boyle, Emily

Brooks, Margaret

Davis, Rocio Q., BA, MT (ASCP)

Dougherty, Elizabeth L., BS, MT (ASCP)

Dourakos, Constance, BS, MT (ASCP)

Koch, Thomas R., PhD

Maloney, Bertha H., BS, MT (ASCP)

Mandula, Eva, MT (ASCP)

Redor, Ofelia, BS

Rundell, Clark, PhD

Schwartz, Lenore A., BS

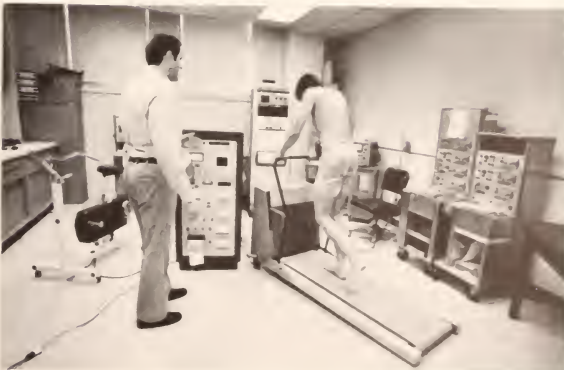
Thomas, Gloria M., MT (ASCP), M (ASCP)

Uycoco, Gloria, BS, H (ASCP)

Wright, Patricia, MT (ASCP) S BB



# PHYSICAL THERAPY PROGRAM



The Physical Therapy Department of the University of Maryland School of Medicine seeks to provide educational enrichment, professional training and personal development.

**ACCREDITATION**

Since 1956, the University of Maryland has offered a four-year program in physical therapy leading to a Bachelor of Science degree. The University of Maryland is accredited by the Middle States Association of Colleges and Secondary Schools and the physical therapy curriculum is approved by the Council on Medical Education of the American Medical Association in collaboration with the American Physical Therapy Association. A graduate is eligible to become a member of the American Physical Therapy Association and to apply for professional licensure in Maryland and in other states.

**CLINICAL AFFILIATIONS**

Clinical education is an essential part of the total physical therapy program offered at the University of Maryland. There are 52 centers currently being used for experiences in acute/general, chronic/rehabilitation, pediatric, and community health settings. Twenty-seven centers are located in Maryland, ten in the District of Columbia, two in Virginia, two in Pennsylvania, six in New Jersey, three in New York, one in North Carolina, and one in Michigan.

Eighteen weeks of clinical experience allow the student to utilize what has been learned and to implement therapeutic and interpersonal skills in the treatment of patients.

**PREPROFESSIONAL EDUCATION**

**Freshman and sophomore curricula.** Preprofessional training consists of liberal arts and science courses. Students may take this portion of their training within the University of Maryland system or at any other accredited college or university. Freshmen are advised to select both pre-physical therapy and an alternate course of study.

**PROFESSIONAL EDUCATION**

**Junior and senior curricula.** Professional training is offered only at the Baltimore City campus of the University of Maryland (UMAB). A student must make separate application and submit to an admission process for the professional portion. Admission to the University of Maryland system as a freshman or sophomore does not guarantee admission to the professional program, since enrollment is limited to 52 competitive positions.

**PREPROFESSIONAL CURRICULUM**

The following courses and credits are required for admission consideration:

Mathematics .....	6
(Two college level courses which may be algebra and trigonometry OR any math course above that level)	
Chemistry .....	8
(General college chemistry, with lab)	
Physics .....	8
(General college physics, with lab)	

Zoology or Biology .....	8
(General Zoology I or Biology I for science majors, with lab plus a second course with lab, e.g., General Zoology/Biology II, Genetics, or Human Anatomy and Physiology. Botany is not acceptable.)	
Social Science .....	3
(Afro-American studies, anthropology, economics, government and politics, urban studies, sociology, geography)	
Psychology .....	6
(One introduction or general course and one of developmental, educational or personality study — abnormal psychology is recommended.)	
English Composition .....	3
(Students with advanced credit or exemption may substitute a three-credit elective.)	
Speech, Public Speaking, or Communications .....	3
(Students with one year of speech in high school may substitute a three-credit elective upon furnishing a transcript.)	
Arts and Humanities .....	6
(History, literature, foreign language, philosophy, appreciation of: art, music, drama, dance)	
Electives .....	9
(Selection may be made in areas of individual interest. No more than two credits of non-theory or skills may be applied. Review or introductory courses may not be used if they are below the required level in biology, chemistry, physics, and math. Recommended courses are human anatomy and physiology, introductory statistics.)	

Academic advisement is available to students enrolled on the UMCP and UMBC campuses. Other interested students should contact the secretary for admissions, Baltimore City campus, or, in the case of students at one of Maryland's public community colleges, seek information about required courses at his/her school's counseling center.

Students may receive credit by achieving percentile scores of at least 50% on the College Level Examination Placement (CLEP) tests. Students should request that official results of these tests be sent to the Department of Physical Therapy for credit evaluation if the scores have not been posted on their transcript.

## PROFESSIONAL DIVISION ADMISSIONS

An Admissions Committee is charged with selecting students annually for the fall semester. Selection is based on grade-point average in preprofessional courses only; results of an Allied Health Professions Admissions Test; and an interview.

Minimum qualification at the junior level is the completion of 60 designated credits with a grade-point average of 2.0 (a grade of less than "C" is not acceptable in any of these courses) and a minimum of 18 credits completed in math and science by the application deadline, which is February 1. There is no exclusion based on sex, age, ethnic background or prior completion of another academic degree.

The department makes an effort to identify and assist qualified minority students.

Enrollment is limited to the 52 seats available. Selection of non-resident candidates is limited, and it is reasonable to assume that at least a "B" average is needed for selection.



## ADMISSION APPLICATION

To obtain an application, address your request to the University of Maryland at Baltimore, Office of Admissions, 660 W. Redwood Street, Baltimore, Maryland 21201 or phone (301) 528-7480. Applications become available after October 1 preceding the year of admission. Deadline date for receipt of application is February 1, and supporting documents must be received by March 1 of the year of admission.

## TEST APPLICATION

To obtain an Allied Health Professions Admissions Test application, address your request to The Psychological Corporation, 304 East 45th Street, New York, New York 10017. Only scores from the November and January test dates will be considered in student selection.

## HOUSING

For information contact the Director of Housing, University of Maryland at Baltimore, 621 W. Lombard Street, Baltimore, Maryland 21201.

## STUDENT AID

For information contact the Student Aid Officer, University of Maryland at Baltimore, 610 W. Lombard Street, Baltimore, Maryland 21201.

	Fall Semester	Spring Semester
<b>TUITION AND FEES</b>		
Matriculation Fee (new students)	\$ 15.00	\$ -
Tuition: In-State	310.00	310.00
Tuition: Out-of-State	1025.00	1025.00
Instructional Resources Fee	15.00	15.00
Supporting Facilities Fee	30.00	30.00
Student Activities Fee	7.50	7.50
Student Health Fee	5.00	5.00
Hospital Insurance — Blue Cross (required if not covered by another source)		
Individual	65.88	65.88
Two Persons	135.06	135.06
Family	177.54	177.54
Dormitory Fee	339.50	339.50
Graduation Fee (senior year)	-	15.00
Junior Summer Clinical Education (tuition and fees) . . . . .		142.00
Approximate cost of books, uniforms and professional fees per year . . . . .		200.00
<i>Costs as listed are subject to change.</i>		

The student should plan his/her finances according to the full schedule which permits only one six-week free period for either full-time employment or vacation. This period will be during the first or second half of the summer between the junior and senior years.

## PROFESSIONAL CURRICULUM

### *Junior Year, First Semester*

**BTPT 320. Physical Therapy Theory and Practice I.** (1-32). Palpation and manipulation of soft tissue for the purpose of evaluating anatomical structures responsible for restriction of normal range of motion or inhibition of functional activity. The student will be expected to acquire a knowledge of basic physiological effects of mas-

sage; demonstrate an understanding of anatomical structure; and acquire a limited proficiency in the application of massage techniques and the principles of peripheral joint manipulation. Eight lecture hours, 24 laboratory hours.

**BTPT 330. Clinical Education and Professional Relations I.** (1-32). Introduction to the concepts of professionalism, health professionals, the concepts of ethical behavior, the purpose of professional organizations (especially the American Physical Therapy Association), and mechanisms of professional regulation, e.g., accreditation, certification, and licensure. Eight lecture hours.

**MANA 303. Human Anatomy.** (8-176). Prerequisite: Biology and/or Zoology — eight hours. A study of the human body morphology developed through lecture and laboratory presentations with emphasis placed on the musculoskeletal and neuromuscular systems. Cadaver dissection is coordinated with lecture. Consideration is given to clinical entities and radiography related to human anatomy. Eighty lecture hours, 96 laboratory hours.

**MPHY 302. Human Physiology I.** (1-16). Prerequisite: Biology and/or Zoology — eight hours. To be taken concurrently with MANA 303. Survey of human physiology related to body systems. Major emphasis placed on cell physiology, nervous system, muscular system, and physiology of bones. Fifteen lecture hours, three laboratory hours.

**MPHY 303. Human Physiology II.** (2-64) with laboratory. A continuation of Human Physiology MPHY 302, relating to the four major systems with consideration given to skin physiology. Laboratory exercises are coordinated with lectures and emphasize the cardiovascular and pulmonary systems. Sixteen lecture hours, 48 laboratory hours.

#### *Junior Year, Winter Session*

**BTPT 304. Nursing Procedures.** (1-20). Specific patient care procedures related to physical therapy, inhalation therapy, and/or nursing are studied. Includes isolation procedures, sterile technique, emergency situations that may occur in clinical settings, catheterization, respirators, specialized beds, injections, tracheotomy and suctioning, improvised equipment, nutrition, bandaging, and vital signs. Twelve lecture hours, eight laboratory hours.

**BTPT 321. Physical Therapy Theory and Practice II.** (3-80). Prerequisite: Physics — eight hours. Lectures and practice in the administration of thermotherapy, cryotherapy, hydrotherapy, and actinotherapy including rationale, therapeutic procedures, and transference by conduction, convection, radiation, and conversion. The physics and physiological effects are reviewed to enhance the students' ability to make judgments in therapeutic application. Considerations for utilizing supportive personnel and responsibilities relating thereto are included. Thirty-two lecture hours, 48 laboratory or clinical practice hours.

#### *Junior Year, Second Semester*

**BTPT 307. Evaluation Procedures.** (4-96). Principles and techniques of performing, recording and analyzing various tests and measurements are presented. Methods of assessing flexibility, girth, length, muscle strength, perceptual-motor deficits, physical fitness, posture, reflexes, sensation and sweating are included. In addition, a regional and systems approach for the application of tests and measurements is covered. The student will demonstrate proficiency in specific tests and measurements. Thirty-two lecture hours, 64 laboratory hours.

**BTPT 331. Clinical Education and Professional Relations II.** (1-36). Continuation of BTPT 330, Clinical Education and Professional Relations I, with lectures one hour a week for the first eight weeks. Approximately 28 clinical hours during the last eight

weeks of the second semester. Additional time may be arranged with consent of the Director of Clinical Education.

**BTPT 340. Rehabilitation.** (3-64). Introduction to basic philosophy underlying comprehensive care of the severely handicapped, principles, practices, and the role of the physical therapist in a multidisciplinary approach. Includes an introduction to functional training, ambulation, application of assistive and supportive devices, and orthotics and prosthetics (emphasizing pre- and post-prosthetic evaluation and treatment). Thirty-two lecture hours, 32 laboratory hours.

**BTPT 342. Therapeutic Exercise I.** (3-64). Application of the theory of exercise and study of developmental principles for the prevention, recognition, and treatment of physical disabilities. Proprioceptive neuromuscular facilitation techniques included. Thirty-two lecture hours, 32 laboratory hours.

**MANA 351. Biomechanics and Kinesiology.** (3-64). Prerequisite: Physics — eight hours. A detailed study of human motion with emphasis on mechanical and functional aspects. Designed to include biomechanical measurement and calculation, functional anatomy, and body mechanics under both normal and pathological conditions. Thirty-two lecture hours, 32 laboratory hours.

**MEDC 303. Clinical Medicine I.** (3-48). Prerequisite: Psychology — six hours. Lectures are given in pediatrics, medicine, geriatrics, psychiatry, and psychology of the handicapped. Emphasis placed on the aging process. Medical lectures include clinical aspects of the following disease entities: collagen, metabolic, renal, gastrointestinal, cardiovascular, infectious, and metastatic. Forty-eight lecture hours.

#### *Junior Year, Summer*

**BTPT 332. Clinical Education III.** (4-210). Full-time clinical experience for six weeks in a clinic during the summer between the junior and senior years. Provides the opportunity to develop proficiency in therapeutic and evaluative procedures learned in the first year. Hours per week are determined by the clinic. This may vary between 35 to 40 hours per week.

#### *Senior Year, First Semester*

**PATH 352. Pathology.** (2-32). Prerequisites: MANA 303, MPHY 302. Includes the study of the basic principles of disease and injury with their application to the various systems of the body. Autopsy and pathological specimens are observed. Thirty-two lecture hours.

**MEDC 353. Clinical Medicine II.** (3-48). Medical lectures in the specialties of radiology, pharmacology, obstetrics/gynecology, dermatology, pulmonary medicine, orthopaedics, and surgery. Emphasis placed on specific aspects of each medical field as related to physical therapy. Forty-eight lecture hours.

**BTPT 350. Neurosciences.** (3-64). Correlation of neuroanatomy, neurophysiology, and clinical neurology, and lesions and their symptoms. The structure and function of the central nervous system will be presented simultaneously, and followed by clinical entities. Students engage in dissections of the human brain, examination of microscopic sections of the brain stem and spinal cord, and laboratory experience involving the study of functional aspects of the nervous system. Thirty-two lecture hours, 32 laboratory hours.

**BTPT 355. Physical Therapy Theory and Practice III.** (3-71). *Part I, Electrotherapy and Electrodagnosis* (48): Includes the physics and the physiological effects of low frequency alternating and direct currents as applied percutaneously for therapeutic and diagnostic use. Application of these procedures are compared with other therapeutic and diagnostic procedures. Sixteen lecture hours, 32 laboratory hours. *Part II, Electromyography and Nerve Conduction Velocity* (23): Includes monitoring



electrical potentials and nerve conduction velocity by means of electromyography. Seven lecture hours, 16 laboratory hours.

**BTPT 370. Biostatistics and Research.** (2-50). Prerequisite: Mathematics — six hours. Designed to prepare students for interpreting and evaluating research designs and statistical findings of biomedical research reports. Selected descriptive and inferential statistical procedures and tests are presented with accompanying problems worked in the laboratory. Twenty-four lecture hours, 26 laboratory hours.

**BTPT 371. Honors Biostatistics and Research.** (3-64). In addition to the material covered in BTPT 370, the power and efficiency of statistical tests and research designs as well as preparation of research proposals and reports are included. Qualifying for department honors requires presentation of an acceptable research proposal which will be carried to completion during the remainder of the year. Thirty-two lecture hours, 32 laboratory hours.

**BTPT 353. Therapeutic Exercise II.** (3-64). Correlation of neurophysiological and developmental principles with the application of exercise techniques utilized to facilitate normal neuromuscular mechanisms. Analyses of normal and abnormal movement, mobility versus stability, neurological conditions, and facilitation or inhibition via the application of cold, compression, movement-positioning, resistance, stretch-pressure, traction, and vibration are included. Specific treatment approaches as applied by Bobath, Brunnstrom, and Rood are surveyed. Thirty-two lecture hours, 32 laboratory hours.

*Senior Year, Mini-Semester and first half of Second Semester*

**BTPT 357. Clinical Education IV.** (8-420). Continuation of Clinical Education III. Full-time experience in two separate clinics for six weeks each from January through March of the senior year. Student has increased responsibility for patient evaluation, planning treatment programs, administration of physical therapy, and comprehensive patient care. Hours per week are determined by the clinic. This may vary between 35 to 40 hours per week.

**BTPT 364. Administration.** (1-16). Introduction to administration and supervision as it applies to the field of physical therapy. Interpersonal relations, organization, personnel management, and physical and fiscal factors are discussed. Practice is provided for written and oral communications; analyzing and describing duties of physical therapy personnel; writing departmental policies; and planning a physical therapy department. Sixteen lecture hours.

**MPHY 351. Applied Physiology.** (2-48). Prerequisites: MPHY 302, 303. Study of physiological adaptations to stress within normal and pathological states. Includes concepts of work, exercise, energy expenditure, oxygen debt, and body composition. Emphasis is placed on cardiovascular, musculoskeletal, and respiratory functions related to physical activity, normal growth and development, the aging process, and prevention of illness. Sixteen lecture hours, 32 laboratory hours.

### *Electives*

Of the following elective courses, students must take either BTPT 362 or BTPT 382 plus one other.

**BTPT 380. Community and Public Health.** (1-TBA\*). An independent study and/or seminar designed to meet the needs of students interested in specific health topics. Emphasis is placed on fieldwork and findings of individual investigation.

**BTPT 381. Therapeutic Exercise III.** (1-TBA\*). Independent study by the student to develop expertise beyond that presented in Therapeutic Exercise I and II. The student will demonstrate his expertise during a seminar.

**BTPT 362. Current Literature.** (1-16). Designed to assist the student in evaluating, abstracting, and reporting current scientific literature in a selected area of concen-

tration. Oral, visual, and written communication used for presentations. Two lecture hours, 14 laboratory hours.

**BTPT 382. Honors Senior Seminar.** (1-TBA\*). Prerequisite: BTPT 371 and acceptance of research proposal. Honors candidates present and discuss literature related to their investigations and report the results of their research. Two copies of the completed thesis must be presented to the department for the granting of honors.

**BTPT 388. Special Topics in Physical Therapy.** (1-3 TBA\*). A given number of lecture-laboratory-demonstrations on a special topic presented by specialist(s) in a given area and/or a problem-solving experience which is commensurate with the student's interest and ability. Course registration and number of credits to be arranged by the department chairman. Open to special students as well as senior physical therapy students.

*\*To be arranged*

## FACULTY

Hardiman, Clarence W., chairman; BS, University of Florida, 1949; Cert. in PT, Duke University, 1950; MS, Florida State University, 1954; PhD, 1964; LPT.

### *Associate Professor*

Hobart, Donald J., BS, Western Maryland College, 1962; MA, University of Maryland, 1967; PhD, 1972.

Jurf, Amin N., BS, Western Maryland College, 1959; PhD, University of Maryland, 1966.

Latimer, Ruth M., BS, University of Richmond, 1945; Cert. in PT, U.S. Army Hospital, 1946; MS, Medical College of Virginia, 1952; MEd, University of Maryland, 1973; LPT.

### *Assistant Professor*

Doser, Nancy Lou, BS, Longwood College, 1953; Cert. in PT, University of Southern California, 1959; MS, Northern Illinois University, 1963; PhD, University of Maryland, 1973; LPT.

### *Instructors*

Alon, Gad, Cert. in PT, Wingate Institute, 1968; MS, University of Maryland, 1972; LPT.\*

Anderson, Paul A., BA, Concordia College, 1969; MA, University of Maryland, 1972.\*

Barnhart, James A., BS, University of Maryland, 1950; Cert. in PT, University of Pennsylvania, 1952; LPT.

Hamill, Martha T., BS, Boston-Bouve College of Northeastern University, 1967; LPT.

Knudsen, James F., BS, University of Maine, 1968; MS, University of New Hampshire, 1970; PhD, Medical College of Georgia, 1974; Post. Doc., University of Maryland at Baltimore, 1976.\*

Marshall, Lindsay W., BA, University of North Carolina, 1970; Cert. in PT, University of Pennsylvania, 1971; LPT.\*

Novell, Joan, BS, University of Connecticut, 1955; LPT.\*

### *\*part-time*

For further information contact the Department of Physical Therapy, Allied Health Professions Building, 32 S. Greene Street, Baltimore, Maryland 21201; telephone (301) 528-7720, 7721.

# RADIOLOGIC TECHNOLOGY PROGRAM





## THE PROGRAM

The four-year program in radiologic technology, under the School of Medicine at the University of Maryland, leads to a Bachelor of Science degree, and is fully approved by the American Medical Association's Council on Medical Education. Graduates of this program are eligible to take the national examination for certification as a registered technologist (R.T., A.R.R.T.) given by the American Registry of Radiologic Technologists.

Graduates of the program are employed in radiologic technology education, radiation safety, radiology administration, clinical and special procedure technology and commercial radiology. One hundred per cent of the graduates have become certified by the A.R.R.T., scoring in the upper 1% of all candidates on a national level and 33% of the graduates have pursued graduate education.

## ADMISSION

Since the Baltimore Campus of the University of Maryland only offers professional courses and programs, the first two undergraduate year must be completed on another University of Maryland campus (UMCP, UMBC, UMES, or UMUC) or other accredited two or four year colleges for the preprofessional courses. Students may apply for advancement or admission to the professional portion of the program after a minimum of three semesters of preprofessional work with a cumulative GPA of 2.5. Application should be made no later than May 1st for the class entering in the fall. In 1976, approximately one of every two applicants to the program was admitted; 15 to 20 students are admitted each fall.

## PREPROFESSIONAL (FRESHMAN/SOPHOMORE) REQUIREMENTS

English Composition .....	.3 credits
Biology/Zoology .....	.8 credits
(Human Anatomy and Physiology are highly recommended)	
Chemistry .....	.8 credits
(Should include Inorganic with lab and Organic with lab)	
Physics .....	.8 credits
Math .....	.6 credits
(Statistics is recommended)	
Behavioral and Social Sciences .....	12 credits
One psychology and one sociology course are required. Other courses can be selected from: economics, philosophy, Afro-American studies, anthropology, urban studies or additional psychology.	
Speech .....	.3 credits
Additional electives* .....	12 credits
* It is suggested that the student meet with an advisor (see below) as early as possible to select electives.	
UMBC and UMES — Mr. Stephen Deaver .....	528-6272
UMCP — Mr. Skip Zile .....	528-6272
All transfer students — Ms. Lisa Mendenhall .....	528-6272

## APPLICATION AND ADMISSION PROCEDURE

Although the Radiologic Technology Program is small, the administration actively strives to achieve a diversity among its students; therefore, no exclusion/limitation is made based on sex, age, race, citizenship, residence, or any other non-academic criterion. Admission is based solely on completion of preprofessional requirements and the student's GPA. The Division of Radiologic Technology uses the interview

process only as a medium of advisement, not selection; but, the division feels that an applicant would benefit by an opportunity to discuss his/her academic background and to see the facility at the University of Maryland Hospital on the UMAB campus.

Applications can be obtained from:

University of Maryland at Baltimore  
Office of Admissions and Registrations  
660 W. Redwood Street  
Baltimore, Maryland 21201  
OR

Allied Health Professions Building  
University of Maryland  
Division of Radiologic Technology  
32 S. Greene Street, Room 215  
Baltimore, Maryland 21201

## PROFESSIONAL PROGRAM

Approximately one-half of the students' time at the UMAB campus will be spent in clinical education, i.e., obtaining clinical experience in the broad field of radiology including: general diagnostic radiology, fluoroscopy, special procedures, mammography, ultrasound, computerized axial tomography, shock trauma, operating room radiography, nuclear medicine, pediatric radiography, and radiotherapy, etc. The University of Maryland Hospital serves as the primary resource for the clinical education portion of the curriculum.

	Fall	Spring	Summer
<i>Junior year required courses</i>	MDRT 300	MDRT 330	MDRT 340
	MDRT 310	MDRT 332	MDRT 345
	MDRT 311	MDRT 333	
	MDRT 314	MDRT 334	
	MDRT 315	MDRT 335	
<i>Senior year required courses</i>	MDRT 360	MDRT 370	
	MDRT 364	MDRT 375	
	MDRT 365	Electives:	
	Electives:	374, 376,	
	362, 366,	384, 385,	
	367	386, 388	

*Winter Mini-course Electives:* MDRT 368, 371, 372, 378, 389

All professional elective courses must be chosen with division approval to complete one of the three areas of specialization: administration, education, or radiologic sciences.

## UNDERGRADUATE MEDICAL PROGRAM

**MDRT 300. Effective Interaction in Allied Health (3).** Using discussions, lectures, and demonstrations, the nature, objectives and outcome of interpersonal interactions are emphasized. Major approaches include transactional analysis, communications theory and medical sociology. Also included in the course are the history and development of group medical ethics, medico-legal situations, and health care delivery systems.



**MDRT 310. Human Anatomy and Physiology via Imaging (5).** The study of human anatomy is approached as visualized through a number of imaging techniques used in radiology, although emphasis is placed on normal structures as demonstrated on the radiograph. Anatomy labs are included using a "viewbox" teaching technique. The study of human physiology emphasizes physiological processes essential to imaging procedures.

**MDRT 311. Physics of Diagnostic Radiology (4).** This course is the first of a sequence of courses in radiological physics, in which the major emphasis is placed on understanding the theoretical framework of radiological science in diagnostic radiology. The course includes the nature, production, measurement, and attenuation of radiation. In addition, the students are presented with an overview of the imaging process, including: circuitry, equipment, and sensitometry.

**MDRT 314. Procedures I (4).** The course includes medical terminology and nursing procedures common to radiology, basic and advanced principles and methods of radiography of the skeletal system (excluding cranium) and torso. In addition to developing psycho-motor skills, the student will evaluate the radiograph for quality and be able to recommend supplementary views based on the radiographic findings and pathology suspected. The course will include lectures, demonstrations, labs and programmed instruction.

**MDRT 315. Clinical Education I (2).** The student will complete specific clinical objectives in the areas of routine and advanced radiography of the chest, abdomen, and the osseous system by supervised clinical experience of 20 hours per week in the Department of Radiology. One hour per week is used as a seminar in which the students will learn to critique their films for proper positioning, technique, and patient protection.

**MDRT 330. Radiobiology (3).** A non-laboratory presentation of the basic principles of radiobiology including: radiochemistry, cellular effects, radiation genetics, differential factors modifying cell sensitivity, effects on tissues and organs, systems and man. Throughout the course, radiobiologic principles will be applied to the fields of radiation safety, radiotherapy, radiodiagnosis, and nuclear medicine. Research is presented which provides evidence (laboratory and epidemiological) used in the evaluation of radiation risks and hazards.

**MDRT 332. Imaging Principles (5).** This course is second in the sequence of radiological physics courses, in which the major emphasis is on the imaging process itself, and how to produce an image which will convey to the radiologist maximum diagnostic information. Therefore, the course will include an in-depth treatment of



sensitometric principles and imaging parameters affecting the ability of the medium to record data with minimum information loss. The student will perform experimentation to demonstrate and apply theoretical and practical principles.

**MDRT 333. Pathology (3).** The course includes the nature and etiology of disease, and major pathological processes. Stress is placed on medical and surgical diseases and their major radiographic manifestations. The "viewbox" teaching techniques will be employed to stress abnormal from normal variants in human anatomy.

**MDRT 334. Procedures II (3).** One half of the course covers basic and advanced methods of radiography of the cranium, including dental radiographic techniques, critical evaluation and identification of radiographs of the skull, face and mastoids with lab demonstrations and practice. The other portion of the course is devoted to the study of the fluoroscopic and urinary procedures and pediatric radiography.

**MDRT 335. Clinical Education II (2).** The student will complete specific clinical objectives in the areas of routine and advanced radiography of the skull (including dental radiography), pediatric radiography and fluoroscopic and urinary procedures by supervised clinical experience of 20 hours per week in the Department of Radiology. One hour per week is used as a seminar in which the students will critique their films for proper positioning, technique, and patient protection.

**MDRT 340. Physics and Clinical Uses of Nuclear Medicine and Therapy (3).** An introduction to the basic physics of nuclear medicine and radiotherapy, including properties of radiopharmaceuticals, and radionuclides, treatment planning, instrumentation and equipment. The course also includes an overview of the clinical uses and goals of radiotherapy and nuclear medicine, appropriate for the diagnostic technologist. In addition to lectures and labs, the student will observe in the nuclear medicine and radiotherapy departments to better appreciate theoretical principles.

**MDRT 345. Clinical Education III (2).** The student gains additional clinical experience of 36 hours per week for eight weeks in the areas covered in the preceding semesters in MDRT 315 and 335. The objectives of this experience are to develop higher levels of clinical skill, increased accuracy and speed, with greater independence and responsibility. Supervision is maintained, but is more indirect, allowing the student to assume a more active role in the management of the radiographic examination in addition to its execution. There will also be a weekly seminar.



**MDRT 360. Radiation Health (3).** This course stresses the reduction of radiation exposure to both patients and personnel in radiology and nuclear medicine by protective procedures, the understanding and use of federal and state regulations/guidelines, and the proper execution of radiation survey procedures. As a major course objective, the student will perform radiation surveys designed to meet or exceed federal and state guidelines.

**MDRT 362. Image Analysis (4).** This course is the third in a sequence of radiological physics courses in which the major emphasis is on the tests and methods used to quantitatively analyze the sensitometric properties of the film, and its ability to record information without significant loss. Through experimentation projects, the student will analyze various recording systems, and will set up a quality control program.

**MDRT 364. Special Procedures in Radiology (4).** A survey of all specialized procedures in current use in radiology, including new modalities, covers: indications, correlative anatomy, techniques employed, equipment and equipment analysis, contraindications and limitations.

**MDRT 365. Clinical Education IV (2).** The student will complete specific clinical objectives in the area of special radiographic procedures, including: neuroradiography, angiography, tomography (computerized and non-computerized), ultrasonography, mammography, etc. In addition, the student may elect to obtain clinical experience in nuclear medicine and/or radiotherapy. One hour per week is spent in seminar in which the student will present case studies. In addition, the student will be required to attend specialized conferences.

**MDRT 366. Techniques of Management and Supervision (3).** Using a lecture-discussion approach, the course covers an overview of management functions, emphasizing those techniques appropriate for the management and supervision in the Department of Radiology. Stress is also placed on human relations, management by objectives, and leadership training.

**MDRT 367. Instructional Design and Implementation (3).** Throughout the course, emphasis is placed on the development of skills basic to teaching: task analysis, set induction, preparing objectives, course syllabus, unit and lesson plans. In addition, the student will utilize and evaluate the skills developed using a number of teaching methods via peer-teaching and follow-up analysis.

**MDRT 368. Special Topics in Radiological Sciences (3).** More advanced study of one or more topics in the radiological sciences — radiation safety, equipment performance, recording systems, information and image analysis, etc. The emphasis and topics treated will vary each year depending on the interests of the instructor and student. The course, therefore, may be taken more than once for credit.

**MDRT 370. General Review for Certification (3).** The goal of this course is to prepare the student for the national certification examination by the American Registry of Radiologic Technologists by review through lecture, programmed instruction and frequent testing. Although no credit will be given for this course toward the degree, it is required.

**MDRT 371. Medical Economics (2).** A basic instruction to the economic analysis of health care systems in the United States, and the discussion of various methods of financing health care.

**MDRT 372. Audiovisual Education (2).** The goals of the course are to introduce the student to the wide range of audiovisual media appropriate for allied health education, and development of skills needed to design, produce, and evaluate various kinds of instructional materials.

**MDRT 373. Radiation Epidemiology (2).** This course will provide an introduction to the methods of epidemiological surveys. Prospective and retrospective studies in



radiation epidemiological research are reviewed in order to correlate low-level radiation doses with somatic and genetic effects.

**MDRT 374. Communication in Radiological Sciences (3).** This course is designed for students specializing in education or administration. The course objective is to develop the communications ability of the student verbally, both in written and oral form. The student will develop those skills necessary in writing grants and other formal proposals, specifications, and articles for scientific or professional journals. Oral communication skills will stress interviewing techniques appropriate for managers and school personnel.

**MDRT 375. Clinical Education V (2).** This is a continuation of MDRT 365. The student will complete specific clinical objectives in the area of special radiographic procedures and, if elected, nuclear medicine and radiotherapy which have not been completed in the preceding fall. Seminars and conferences will be continued.

**MDRT 376. Non-ionizing and New Imaging Modalities (3).** This course includes the physics, instrumentation, equipment and clinical uses of: ultrasonography, thermography, computerized axial tomography, xerography, electron radiography, and other recent advances in imaging techniques of radiology.

**MDRT 378. Special Topics in Imaging Procedures (2).** In-depth treatment of one or more of the following imaging procedures: body section radiography, mammography, neuro-radiography, vascular radiography, procedures in nuclear medicine, ultrasonography. The emphasis and topics treated will vary each year depending on the interests of the instructor and student. Therefore, the course may be taken more than once for credit.

**MDRT 384. Educational Tests and Measurements (3).** The course includes problems in measurement, teacher use and interpretation of standardized tests, the design of teacher-made tests, the evaluation and use of test data and grading procedures.

**MDRT 385. Departmental Organization and Design (4).** This course includes an introduction to the principles or organizational structure and functioning applied to hospitals and departments of radiology. Analysis of the organization is stressed using managerial analysis techniques including work measurement, work study, flow charting and departmental survey techniques to determine the adequacy of the physical plant and staffing requirements. The student will perform a work study and/or do a departmental survey and re-design.

**MDRT 386. Program and Curriculum Design (4).** Design, organization and administration of radiologic technology programs at both the certificate and college level which will meet the AMA recommendations and essentials. As a major course project, the student will write a curriculum proposal and complete a program self-study at either the A.A. or B.S. level, which complies with essentials and recommendations.

**MDRT 387. Research in Radiological Sciences (4).** The course covers basic principles of research design, methods of research, evaluation of research data, plus critique of research methods described in professional journals. The student must design an original research project in the radiological sciences or in educational or management research, in addition to writing critiques.

**MDRT 389. Field Experiences in Specialization (2).** This course will be available to selected students to give them the opportunity to get practical experience in the area of specialization (education, administration, or radiological sciences). The specific objectives of the field experience will be set cooperatively by the field site supervisor, the student, and the student's faculty advisor selected by the department. This course may be taken more than once, to gain experience in more than one area of specialization, or to develop advanced skills in one specific area.



*Program Director*

Warner, Sandra L., assistant professor; RT, Mercy Hospital, Baltimore; BS, Towson State College; MA, Towson State College.

*Education Coordinator*

Arrieta, Beatriz P., associate; BA, St. Theresa's College, Manila, Philippines; RT, University of Maryland.

**FACULTY**

Deaver, Stephen H., BS, RT, University of Maryland School of Medicine.

McCargo, Julia W., RT, University of Maryland Hospital.

Mendenhall, Lisa, BS, RT, University of Maryland School of Medicine.

Zile, Zoland Z., III, BS, RT, Alderson-Broadbudd College, West Virginia; MS, Hunter College of the City University of New York.

# FACULTY



## ANATOMY

### *Professor*

Guth, Lloyd, chairman; BA, New York University, 1949; MD, 1953.  
Hall-Craggs, E. C. B., BA, Cambridge University, 1947; MB, Bvhir, 1949; MA, 1959; PhD, London, 1965.  
Richardson, K.C., BS, University of Western Australia, 1926; MS, 1927.  
Young, M. Wharton, BS, Howard University, 1926; PhD, University of Michigan, 1934; MD, Howard University, 1930.\*

### *Associate Professor*

Donati, Edward, BA, King's College, 1951; PhD, University of Maryland, 1964.  
Mech, Karl, Sr., BS, University of Maryland, 1932; MD, 1935.\*  
Rennels, Marshall L., BS, Eastern Illinois University, 1961; MA, University of Texas Medical Branch, 1964; PhD, 1966.  
Shear, Charles, BS, University of Illinois, 1965; MA, Columbia University, 1967; PhD, Columbia University, 1969.  
Strum, Judy, BS, University of Washington, 1963; PhD, 1968.

### *Assistant Professor*

Barrett, Charles, BS, King's College, 1957; PhD, University of Maryland, 1969.  
Bulmash, Melvin, BA, Johns Hopkins University, 1946; DDS, University of Maryland, 1950; MS, 1969.\*  
Gearhart, John, BS, Pennsylvania State University, 1964; MS, University of New Hampshire, 1966; PhD, Cornell University, 1970.  
Kalewski, A. A., BS, University of Maryland, 1962; MD, 1966.  
Klein, Albert, BA, Washington and Jefferson College, 1964; PhD, Duke University, 1973.  
Oh, Tae, BS, Seoul National University, 1966; MS, University of Saskatchewan, 1971; PhD, 1973.  
Oster-Granite, MaryLou, BA, University of Rochester; PhD, Johns Hopkins University, 1974.  
Rees, Rosemary, BSc, University of Sydney, 1967; PhD, Washington University, 1975.  
Reier, Paul, BS, Cleveland State University, 1968; PhD, Case Western Reserve, 1972.  
Schulter, Frances, BS, Birmingham Southern College, 1952; MS, Emory University, 1954; PhD, George Washington University, 1971.

## ANESTHESIOLOGY

### *Professor*

Helrich, Martin, chairman; BS, Dickinson College, 1946; MD, University of Pennsylvania, 1946.  
Joseph, Samuel I., AB, Depauw University, 1939; MS, New York University, 1941; PhD, 1943; MD, Wayne University, 1947.  
McAslan, T. Crawford, MB, ChB, University of Glasgow, 1945.

### *Associate Professor*

Chodoff, Peter, BS, Temple University, 1947; MD, Jefferson Medical College, 1951.\*  
Glassman, Lionel, MD, University of Toronto, 1945.\*  
Matjasko, M. Jane, BA, Mercyhurst College, 1964; MD, Medical College of Pennsylvania, 1968.  
Selvin, Beatrice L., BA, University of Michigan, 1942; MD, New York Medical College, 1945.  
Shin, Baekhyo, College of Arts and Sciences, Korea, 1961; MD, College of Medicine, Korea, 1965.

### *Assistant Professor*

Ashman, Michael N., BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.  
Cohen, Susan M., MD, University of Maryland, 1971.  
del Rosario, Romeo S., MD, Manila Central University, Philippines, 1958.  
Horwits, Gwynne L., AB, Oberlin College, 1967; MD, University of Maryland, 1971.  
Kaplow, Sheppard, MD, Dalhousie University, 1959.\*  
Keller, Melvin L., BS, University of Illinois, 1945; DDS, University of Detroit, 1948; MD, University of Amsterdam, 1955.\*  
Liteanu, Michael, MD, Free University of Brussels, 1949.\*



Mackenzie, Colin F., MB ChB, University of Aberdeen, 1968.  
 Maher, P. Oliver, MB, ChB, National University of Ireland, 1969.\*  
 Mergner, Gertrud W., MD, University of Iowa, 1967.  
 Mostello, Lucille A., BA, Seton Hill College, 1966; MD, Johns Hopkins University, 1970.  
 Parelhoff, Merrill E., BS, University of Maryland, 1944; MD, 1949.\*  
 Penafiel, Mario L., MD, University of Santo Tomas, 1960.  
 Pats, Albert, MD, University of Maryland, 1954.\*

#### *Instructor*

Goldman, Edwin J., BS, University of New Brunswick, 1956; MD, Dalhousie University, 1960.\*  
 Millan, Ellen Ann, BA, George Washington University, 1959; MD, University of Maryland, 1964.

## **BIOLOGICAL CHEMISTRY**

#### *Professor*

Adams, Elijah, chairman; BA, Johns Hopkins University, 1938; MD, University of Rochester, 1942.  
 Bucci, Enrico, MC, Liceo Mamiani, Italy, 1950; MD, University of Rome, 1956; PhD, (biochemistry), 1965.  
 Frank, Leonard H., BA, University of Oklahoma, 1950; PhD, Johns Hopkins University, 1957.  
 Kirtley, Mary E., BA, University of Chicago, 1956; MA, Smith College, 1958; PhD, Western Reserve, 1964.  
 Pomerantz, Seymour H., BA, Rice Institute, 1948; PhD, University of Texas, 1952.

#### *Associate Professor*

Black, Lindsay W., BS, University of Chicago, 1962; PhD, Stanford University School of Medicine, 1967.  
 Ichikawa, Tomio (visiting research), B. Pharm. Sci., Osaka University (Japan), 1956; PhD, Osaka University, 1970.  
 Rosen, Barry P., BS, Trinity College, 1965; MS, University of Connecticut, 1968; PhD, 1969.

#### *Assistant Professor*

Bucci, Clara F., MC, Liceo Volpicelli, Italy, 1951; MS, University of Rome, 1956; PhD, 1964.  
 Padmanabhan, Radhakrishnan, BS, Vivekananda College (India), 1960; MS, Presidency College, 1962; PhD, Wayne State University, 1968.  
 Polakis, Stamatios, E., BS, University of Athens (Greece), 1958; PhD, Oxford University, 1965.  
 Rao, Nimmagadda, BS, Madras University (India), 1954; MS, Sagar University, 1956; PhD, Madras University, 1963.  
 Waechter, Charles J., AA, Baltimore Junior College, 1963; BS, University of Maryland, 1966; PhD, University of Kentucky, 1971.

#### *Instructor*

Brown, Ann Virginia, AB, Goucher College, 1940.

#### *Associate*

Brey, Robert N., III, BS, Trinity College, 1970; PhD, University of Virginia, 1976.  
 Castillo, Carlos J., MD, Universidad Nacional de Colombia, 1964; PhD, University of Pennsylvania, 1973.  
 Eby, Denise, BS, St. Joseph College, 1939; MS, Catholic University, 1953; PhD, University of Maryland, 1970.  
 Hasan, Syed M., BS, Osmania University, 1962; MS, 1964; PhD, University of Hawaii, 1975.  
 Ramaswamy, Sengoda G., BDC, Madras University, 1965; MSc, 1969; PhD, 1975.  
 Ren, Peter, BA, Adelphi University, 1971; PhD, University of Rhode Island, 1976.

## **BIOPHYSICS**

#### *Professor*

Mullins, Lorin J., chairman; BS, University of California, 1937; PhD, 1940.  
 Sjodin, Raymond A., BS, California Institute of Technology, 1951; PhD, University of California, 1955.

*Associate Professor*

Beaugé, Luis MD, Cordoba National University, Argentina, 1961; PhD, 1964.  
 Hybl, Albert, BA, Coe College, 1954; PhD, California Institute of Technology, 1961.

*Assistant Professor*

Abercrombie, Ronald F., BS, University of North Carolina, 1968; PhD, University of Maryland at Baltimore, 1977.

**FAMILY PRACTICE PROGRAM***Professor*

Kowalewski, Edward J., chairman; BS, Franklin and Marshall College, 1942; MD, George Washington University, 1945.

*Associate Professor*

Davis, LeRoy T., BS, Westminster College, 1948; MS, Syracuse University, 1951; PhD, 1954; MD, New York Medical College, 1961.

Guyther, J. Roy, BS, University of Maryland, 1941; MD, 1943.\*

Hill, C. Earl, BS, Loyola College, 1956; MD, University of Maryland, 1960.

Khan, Misbah, BS, MD, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.\*

Morton, Richard, BSC, University of London, 1943; MBBS, 1953; MPH, UCLA, 1969.\*

Weir, W. Douglas, consultant in psychiatry; AB, St. John's College, 1958; MD, University of Maryland, 1964.\*

*Assistant Professor*

Alevizatos, Aristides C., AB, Washington & Lee University, 1956; MD, University of Maryland, 1960.\*

Andrews, Leon P., AB, University of North Carolina, 1942; MD, Harvard Medical School, 1945.\*

Arbogast, Richard C., BA, Thomas More College, 1961; MD, Johns Hopkins University, 1965.

Baker, Alva S., AB, Western Maryland College, 1966; MD, University of Maryland, 1970.\*

Bianco, Emidio A., BS, Loyola College, 1950; MD, Georgetown University, 1954.\*

Bronushas, Joseph B., BS, Loyola College, 1946; MD, University of Maryland, 1950.

Hoopes, John M., BS (pharmacy), Ohio Northern University, 1970; PharmD, Duquesne University, 1974.\*

McKay, J. Nelson, MD, University of Maryland, 1952.\*

McPhillips, James J., BA, LaSalle College, 1959; MD, State University of New York, Down State, 1963.\*

Perry, Morris, MA&S, Georgetown University, School of Medicine, 1944; MD, 1948.\*

Ross, Warren M., BA, University of Buffalo, 1967; MD, 1971.

Satterfield, Sharon B., BS, Medical College of Virginia, 1967; MD, University of Michigan, 1970.\*

Shochet, Bernard R., BS, University of Maryland, 1952; MD, 1954.\*

Welliver, Daniel I., BA, Western Maryland College, 1950; MD, University of Maryland, 1954.\*

*Instructor*

James, William T., BS, University of Kansas, 1958.

Krick, John P., BA, St. Meinrod College, 1968; MSW, University of Maryland, 1974.

Novak, Theresa M., RN, Georgetown University, 1947; BSNE, University of Maryland, 1958; MEd, University of Maryland, 1972.

**INTERNAL MEDICINE***Professor*

Woodward, Theodore E., chairman; BS, Franklin and Marshall College, 1934; MD, University of Maryland, 1938; DSc (honorary), Western Maryland College, 1950; DSc (honorary), Franklin and Marshall College, 1954.

Bereston, Eugene, dermatology; AB, Johns Hopkins University, 1933; MD, University of Maryland, 1937; MSc, University of Pennsylvania; DSc, 1955.\*

Burnett, Joseph W., AB, Yale University, 1954; MD, Harvard Medical School, 1958.\*

Calia, Frank M., AB, Harvard College, 1958; MD, Tufts Medical School, 1962.

Connor, Thomas B., BA, Loyola College, 1943; MD, University of Maryland, 1946.  
 Greisman, Sheldon E., MD, New York University, 1949.  
 Hornick, Richard B., AB, Johns Hopkins University, 1951; MD, 1955.  
 Iber, Frank, BA, Miami University, 1948; MA, 1949; MD, Johns Hopkins University, 1953.  
 Johnston, Gerald S., BS, University of Pittsburgh, 1952; MD, 1956.\*  
 Karns, James R., BS, University of Maryland, 1939; MD, 1940.\*  
 Lisansky, Ephraim T., BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.\*  
 Mead, Joseph, AB, Loyola College, 1954; MD, University of Maryland, 1958.\*  
 Rapoport, Morton I., BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.\*  
 Robinson, Harry M., Jr., BS, University of Maryland, 1931; MD, 1935.\*  
 Scherlis, Leonard, AB, Johns Hopkins University, 1942; MD, 1945.  
 Shapiro, Albert, dermatology; BS, University of Maryland, 1934; MD, 1937.\*  
 Smith, Vernon M., MD, Temple University, 1949.  
 Snyder, Merrill J., BS, University of Pittsburgh, 1940; MS, University of Maryland, 1950; PhD, 1953.  
 Wiernik, Peter H., BA, University of Virginia, 1961; MD, 1965.\*  
 Wiswell, John G., BA, Dalhousie University, 1938; BS, 1940; MDCM, 1943.

#### *Associate Professor*

Buddemeyer, Edward U., BA, Gettysburg College, 1955; ScD, Johns Hopkins University, 1968.  
 Calton, Gary, BS, Eastern New Mexico University, 1965; MS, 1968; PhD, Texas A&M University, 1971.\*  
 Fisher, Michael L., MD, University of Illinois, 1967.\*  
 Goodman, Jay S., MD, University of Maryland, 1961.  
 Hamilton, Bruce P., MB, ChB, University of Otago, New Zealand, 1960.\*  
 Hrehorovich, Victor, BA, Harvard University, 1962; MD, 1966.  
 Jiji, Rouben M., MD, Royal College of Medicine, Baghdad, Iraq, 1950.  
 Kerr, Harry D., BS, Maryville College, 1951; MD, Temple University, 1956.  
 Kushner, Herbert A., AB, Franklin and Marshall College, 1956; MD, Johns Hopkins University, 1960.\*  
 Lee, Yu-Chen, BS, Taikoku Imperial University, 1945; MD, National Taiwan University, Formosa, 1949.  
 Levine, Myron M., BS, City College of New York, 1963; MD, Medical College of Virginia, 1967.  
 Little, John R., MB, ChB, University of Otago, New Zealand, 1959; PhD, 1965.  
 Loberg, Michael D., BS, Trinity College, 1969; MS, Washington University, 1972; PhD, 1973.  
 Martin, Luis G., MD, Madrid Medical School, 1954.  
 Mitchell, Thomas G., BS, St. Joseph's College, 1950; MS, University of Rochester, 1956; PhD, Georgetown University, 1963.\*  
 Morrison, Samuel, gastroenterology, AB, Johns Hopkins University, 1925; MD, 1929.\*  
 Parker, Robert T., AB, Johns Hopkins University, 1941; MD, 1944.\*  
 Raskin, Howard F., BA, Johns Hopkins University, 1945; MD, University of Maryland, 1949.\*  
 Raskin, Joan, BA, Goucher College, 1951; MD, University of Maryland, 1955.\*  
 Reed, Julian, BS, University of Maryland, 1948; MD, 1952.\*  
 Rusche, Edward, MD, University of Leyden, The Netherlands, 1954.\*  
 Russell, Robert M., BA, Harvard University, 1963; MD, Columbia University, 1967.  
 Sadler, John H., BS, Duke University, 1956; MD, 1960.  
 Sampliner, Richard E., BA, Yale University, 1963; MD, Western Reserve University, 1967.  
 Schimpff, Stephen C., BA, Rutgers University, 1963; MD, Yale University, 1967.\*  
 Simpson, David G., MB, BCh, Queen's University, Belfast, 1942; MD, 1950.  
 Singleton, Robert T., BS, University of Maryland, 1951; MD, 1953.  
 Standiford, Harold C., AB, Johns Hopkins University, 1960; MD, University of Maryland, 1964.\*  
 Stevens, Mary Betty, BA, Vassar College, 1948; MD, Johns Hopkins University, 1955.\*  
 Togo, Yasushi, BS, Tokyo Kotogakke, Japan, 1941; MD, University of Tokyo, 1945.  
 Whitfield, Charles L., BA, University of North Carolina (Chapel Hill), 1960; MD, 1965.  
 Yaffe, Stanley N., BS, University of Maryland, 1941; MD, 1944.\*  
 Zieve, Phillip D., AB, Franklin and Marshall College, 1954; MD, University of Maryland, 1958.

#### *Assistant Professor*

Alevizatos, Aristides C., AB, Washington and Lee University, 1956; MD, University of Maryland, 1960.



- Amsel, Sheldon, BS, Pennsylvania State University, 1957; MD, Jefferson Medical School, 1961.
- Antlitz, Albert, BS, Georgetown University, 1951; MD, 1955.\*
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- Atkins, John L., AB, Mount St. Mary's College, 1932; MD, University of Pennsylvania, 1936.\*
- Baum, Richard A., AB, Brown University, 1964; MD, University of Maryland, 1968.
- Bryan, Cedric W., MD, University of Queensland (Australia) 1962.\*
- Burkle, Joseph H., BA, University of Pennsylvania, 1940; MD, 1943.\*
- Caplan, Ellis S., BS, University of Maryland, 1964; MD, 1968.
- Carliner, Nathan H., BA, Johns Hopkins University, 1961; MD, 1965.\*
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- Cohen, Miriam, MD, University of Maryland, 1964.
- DeFelice, Charles E., BS, University of Maryland, 1962; MD, 1967.
- Dembo, Donald H., AB, Johns Hopkins University, 1951; MD, University of Maryland, 1955.\*
- Dilaimy, Mouta, MD, Baghdad School of Medicine (Iraq), 1961.\*
- Donohue, Salvatore R., BA, Loyola College, 1959; MD, University of Maryland, 1964.
- Dureza, Renan J., AA, University of St. Augustine, 1959; MD, University of Santo Tomas, Philippines, 1961.\*
- Dutta, Sudhir K., BS, S.D. College (India), 1965; MB, BS, University of Delhi, 1970.
- Ebeling, William C., III, BS, University of Maryland, 1943; MD, 1944.\*
- Epstein, Barry H., AB, Columbia University, 1960; MD, Chicago Medical School, 1964.\*
- Esterhay, Robert J., Jr., BA, Harvard University, 1965; MD, Case Western Reserve University, 1969.\*
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- Goldner, Ronald, BS, University of Maryland, 1960; MD, 1965.
- Hankin, Samuel, MD, University of Maryland, 1928.\*
- Heyman, Meyer R., BS, University of Maryland, 1966; MD, 1970.
- Hobbins, Thomas E., AB, University of Pennsylvania, 1961; MD, Hahnemann Medical College, 1965.
- Hofkin, Gerald A., AB, Johns Hopkins University, 1957; MA, 1957; MD, University of Maryland, 1961.\*
- Hookman, Perry, BA, New York University, 1954; MD, State University of New York, 1958.\*
- Janoski, Alfonso H., BA, Seton Hall University, 1957; MD, Columbia University, 1961.
- Jones, Alfred E., MD, University of Manitoba (Winnipeg), 1959.\*
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- Levi, John A., MB, BS, University of Sydney, 1967; MRACP, Royal Australian College of Physicians, 1970.\*
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- Light, Paul D., AB, Holy Cross College, 1968; MD, University of Maryland, 1972.
- List, Noel D., MD, State University of New York, 1965; MPH, Harvard University, 1967.
- McConville, John, BA, University of Notre Dame, 1964; MD, New Jersey College of Medicine, 1968.\*
- Merritt, John, AB, Dartmouth College, 1954; MD, Yale University, 1958.\*
- Miller, Louis W., BS, University of Maryland, 1963; MD, 1967; MPH, Johns Hopkins School of Public Health & Hygiene, 1969.\*
- Miller, Roger M., AB, Dartmouth College, 1959; MD, Jefferson Medical College, 1963.\*
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- Nowakowski, Andrew, BS, Brooklyn College, 1962; MD, Downstate Medical Center, 1966.
- O'Connell, Michael J., BA, University of Minnesota, 1966; MD, 1969.\*
- Papadopoulos, Chris, MS, BCH, University of Alexandria, Egypt, 1956.\*
- Plotnick, Gary D., AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.\*
- Pototsky, Ronald S., AB, Johns Hopkins University, 1964; MD, University of Maryland, 1968.\*
- Quinlan, James BS, University of Maryland, 1962; MD, 1966.
- Ramos, Emilio, BA, St. Joseph University, Lebanon, 1955; MD, 1963.
- Salan, Jerry, BA, St. John's College, 1954; MD, University of Maryland, 1960.\*
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- Schlossberg, Barry J., BA, Johns Hopkins University, 1964; MD, University of Maryland, 1968.\*

Schmidt, Marcia C., BS, University of Colorado, 1963; MD, University of Florida, 1967.  
 Serpick, Arthur, BS, University of Maryland, 1956; MD, 1959.\*  
 Shaw, Charles E., BS, University of Maryland, 1942; MD, 1944.\*  
 Silverstein, Emanuel, BS, University of Maryland, 1957; MD, 1960.\*  
 Sina, Bahram, MD, Faculte de Medecine de Paris, 1955.\*  
 Smoot, Roland T., BS, Howard University, 1948; MD, 1952.\*  
 Swisher, Kyle Y., Jr., MD, University of Maryland, 1948.\*  
 Tudino, Mattia, BS, Providence College, 1953; MD, University of Bologna, Italy, 1960.\*  
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 Woodward, Celeste L., BA, University of Aix-Marseilles, France, 1932; MD, University of Maryland, 1938.\*  
 Woodward, William E., AB, Princeton University, 1961; MD, Johns Hopkins University, 1965.  
 Yen, Michael, MD, First Medical College of Shanghai, 1965.\*  
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#### *Instructor*

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 Austin, Perry, AB, Princeton University, 1943; MD, Columbia College of Physicians and Surgeons, 1947.\*  
 Awalt, Lawrence F., BS, Loyola College, 1956; MD, University of Maryland, 1960.  
 Biggs, Richard D., Jr., BA, Princeton University, 1960; MD, University of Maryland, 1964.\*  
 Chang, Paul, BA, Harvard University, 1966; MD, Columbia University, 1970.  
 Cheikh, Issam E., MD, Damascus University, 1968.\*  
 Dear, William, BS, University of Maryland, 1959; MD, 1964.\*  
 Espenschade, Park W., Jr., BS, George Washington University, 1958; MD, Johns Hopkins University, 1962.\*  
 Fiocco, Vincent J., AB, Columbia College, 1954; MD, University of Maryland, 1957.\*  
 Gonzalez, Luis F., MD, University of Maryland, 1952.\*  
 Grenzer, Louis, AB, Duke University, 1962; MD, University of Maryland, 1966.\*  
 Hammann, John, BS, Loyola College, 1953; MD, University of Maryland, 1957.\*  
 Hayes, Michael, BS, University of Maryland, 1959; MD, 1963.\*  
 Inayatullah, Mohammad, MS, BS, King Edward Medical College, Lahore, Pakistan, 1956.\*  
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 Karpers, Bernard S., BS, Loyola College, 1958; MD, University of Maryland, 1962.\*  
 Kilpe, Vilis, BA, DePauw University, 1958; MD, Washington University, 1962.\*  
 Lawrence, George, BS, Hobart College, 1959; MD, Tufts Medical College, 1963.\*  
 McPhillips, James, BA, LaSalle College, 1959; MD, SUNY Downstate Medical Center, 1963.\*  
 Messina, John J., BA, Johns Hopkins University, 1956; MD, University of Maryland, 1960.\*  
 Nagel, David, BS, Loyola College, 1960; MD, University of Maryland, 1964.\*  
 Nolan, James J., BS, Loyola College, 1937; MD, University of Maryland, 1941.\*  
 Owens, L. Kemper, BS, Franklin and Marshall College, 1948; MD, University of Chicago, 1960.\*  
 Pearson, Frederick N., AB, Princeton University, 1964; MD, University of Maryland, 1969.\*  
 Randall, William E., Jr., BS, University of Maryland, 1968; MD, 1972.  
 Rivera, Luis E., BS, University of Puerto Rico, 1965; MD, 1969.\*  
 Robbins, E. Lee, BA, Dartmouth College, 1960; MD, University of Maryland, 1964.\*  
 Saunders, Elijah, BS, Morgan State College, 1956; MD, University of Maryland, 1960.\*  
 Stephenson, Richard R., BS, University of Maryland, 1958; MD, 1962.\*  
 Stone, John H., BS, University of Maryland, 1947; MD, 1951.\*  
 Stoner, Robert, BA, Rutgers University, 1960; MD, University of Maryland, 1964.\*  
 Updike, Ralph E., BS, University of Maryland, 1958; MD, 1962.\*  
 Wolfe, Irving D., BA, Johns Hopkins University, 1963; MD, University of Maryland, 1968.\*

#### *Associate*

Agapitos, George, MD, University of Athens, 1948.\*  
 Blazek, Charles, AB, Columbia College, 1942; MD, College of Physicians and Surgeons, Columbia University, 1945.\*  
 Camitta, Francine D., AB, University of Pennsylvania, 1959; MD, Hahnemann Medical College, 1963.\*  
 Furnary, Joseph, BS, University of Pittsburgh, 1938; MD, University of Maryland, 1942.\*

Gould, William, BS, Duke University, 1961; MD, University of Maryland, 1965.\*  
 Hansen, Sharon L., BS, Beaver College, 1960.\*  
 Karfgin, Walter, BS, Washington College, 1932; MD, University of Maryland, 1936.\*  
 Knoch, H. Roebling, MC, Temple University, 1941.\*  
 Mueller, Paul, BS, Loyola College, 1951; MD, University of Maryland, 1955.\*  
 O'Mansky, Samuel I., BA, Duke University, 1952; MD, 1957.\*  
 Plott, Michael F., AB, Loyola College, 1960; MD, Georgetown University, 1964.  
 Roig, Ramon, BS, University of Puerto Rico, 1955; MD, University of Maryland, 1959.\*  
 Samelson, Lee, PhD, University of Chicago, 1948; MD, Harvard Medical School, 1952.\*  
 Shear, Joseph, BS, Pharm., University of Maryland, 1943; MD, 1947.\*  
 Steinbach, Stanley, AB, Johns Hopkins University, 1942; MD, University of Maryland, 1945.\*  
 Townshend, Wilfred, AB, Johns Hopkins University, 1936; MD, University of Maryland, 1940.\*  
 Van Lill, Stephen J., AB, Duke University, 1938; MD, University of Maryland, 1943.\*  
 Warner, Larry J., BS, University of Maryland, 1963; MD, 1967.\*  
 Weber, Ralph, BS, Franklin and Marshall College, 1949; MD, Temple University, 1954.\*

#### *Emeritus*

Cotter, Edward F., MD, University of Maryland, 1935.\*

## INTERNATIONAL HEALTH PROGRAM

Dennis, John M., vice chancellor for health affairs and dean, University of Maryland School of Medicine; BS, University of Maryland, 1943; MD, 1945.

#### *Professor*

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#### *Associate Professor*

Aslamkhan, Mohammed, BS, Punjab University, 1951; MS, 1953; DSc, Johannes Gutenberg Universitat, 1963.

Baker, Richard H., BS, University of Illinois, 1958; MS, 1962; PhD, 1965.

Bhalla, Satish C., BS, East Punjab University, 1954; MS, 1956; MA, University of Kansas, 1963; PhD, University of Notre Dame, 1966.

#### *Assistant Professor*

McCarthy, Vincent C., BA, University of Toronto, 1953; MS, University of Maryland, 1961; PhD, 1967.

Sakai, Richard K., BA, Boston University, 1959; MA, University of Hawaii, 1964; PhD, 1968.

#### *Associate*

Ainsley, Richard W., BS, San Diego State University, 1968; PhD, University of Texas at Austin, 1974.

Hayes, Curtis G., BS, Clemson University, 1967; MS, 1970; PhD, Yale University, 1976.

Reisen, William K., BS, University of Delaware, 1967; MS, Clemson University, 1968; PhD, University of Oklahoma, 1974.

## MICROBIOLOGY

#### *Professor*

Wisseman, Charles L., Jr., chairman; BA, Southern Methodist University, 1941; MS, Kansas State College, 1943; MD, Southwestern Medical College, 1946.

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Kessel, Rosslyn W.I., MBBS, University College Hospital, Medical School, London, England, 1955; PhD, Rutgers University, 1960.

Traub, Robert, BS, College of the City of New York, 1938; MS, Cornell University, 1939; PhD, 1947.



*Associate Professor*

Eylar, Ollie R., BA, University of Minnesota, 1952; MS, 1955; PhD, 1959.

Snyder, Merrill J., BS, University of Pittsburgh, 1940; MS, University of Maryland, 1950; PhD, 1953.\*

*Assistant Professor*

Myers, William F., BA, University of Kansas, 1949; MA, 1957; PhD, 1958.

Silverman, David J., BS, Muhlenberg College, 1965; MS, University of Tennessee, 1967; PhD, West Virginia University, 1971.

Smith, Jonathan F., BA, Colby College, 1968; PhD, University of Texas, 1974.

**NEUROLOGY***Professor*

Nelson, Erland, chairman; AB, Carthage College, 1947; MD, Columbia University College of Physicians and Surgeons, 1951; PhD, University of Minnesota, 1961.

Heck, Albert F., AB, Johns Hopkins University, 1954; MD, University of Maryland, 1958.

Mayer, Richard F., BS, St. Bonaventure College, 1950; MD, University of Buffalo, 1954.

Merlis, Jerome K., neurophysiology; BS, University of Louisville, 1933; MD, 1937; MS, 1938.

Van Buskirk, Charles, AB, Westminster College, 1939; MS (microanatomy), St. Louis University, 1941; PhD, University of Minnesota, 1943; MD, Albany Medical College, 1947; MS (neurology), University of Minnesota, 1953.\*

*Associate Professor*

Max, Stephen R., biochemistry; BS, University of Rhode Island, 1962; PhD, 1966.

Price, Thomas R., BA, University of Virginia, 1956; MD, 1960.

Rennels, Marshall L., BS, Eastern Illinois University, 1961; MS, University of Texas Medical Branch, 1964; PhD, 1966.

Sutton, Granger G., BS, Massachusetts Institute of Technology, 1952; MD, University of Maryland, 1958.

Yannakakis, George D., MD, National University of Athens, 1956.\*

*Assistant Professor*

Akinson, Matthew, BA, Princeton University, 1948; MD, Johns Hopkins University, 1952.\*

Forbes, Michael S., BA, University of Virginia, 1966; PhD, 1971.

Gumbinas, Maria, BA, University of Chicago, 1963; MD, University of Chicago, 1966.

Khurana, Ramesh, MB, BS, Government Medical College, Amritsar, India, 1969.

Koski, Carol Lee, BA, Goucher College, 1964; MD, University of Maryland, 1968.

Kramer, Morton D., AB (pharmacy), University of Maryland, 1950; MD, 1955.\*

Mosser, Robert S., BS, University of Maryland, 1949; MD, 1951.

Oleynick, Anatol H., AB, University of Pennsylvania, 1952; MD, University of Chicago, 1956.\*

Teitelbaum, Harry A., BS, University of Maryland, 1929; PhD, 1936.\*

Toro, Rodrigo, AB, Colegio "Deogracias Cardona," Columbia, 1952; MD, Universidad Nacional, 1959.

*Instructor*

Belega, A. Gary, BS, University of Maryland, 1966; MD, 1970.\*

Eckholdt, John W., AB, University of Minnesota, 1959; BS, 1961; MD, 1963.\*

Genut, A. Allan, BS, University of Maryland, 1967; MD, University of Maryland, 1971.\*

Greenberg, Alan, AB, University of Rochester, 1957; MD, Albert Einstein College of Medicine, 1961.\*

Hulfish, Barbara, BA, American University, 1944; MD, University of Rochester, 1952.

Law, William, AB, Loyola College, 1957; MD, University of Maryland, 1962.\*

Robbins, Solomon, BA, University of Florida, 1961; MD, Medical College of Georgia, 1965.\*

Salan, Sandra, BS, University of Maryland, 1965; MD, 1966.\*

Toop, James B., BS, University of Edinburgh, 1969; PhD, 1974.

Wagner, Arthur M., BA, University of Pennsylvania, 1966; MD, University of Maryland, 1970.

Wexler, Ira, BS, Rensselaer Polytechnic Institute, 1957; MS, Downstate Medical Center, 1959; PhD, 1963; MD, 1966.\*

*Associate*

Phantholt, Barbara A., BS, Mt. St. Agnes College, 1965; MT, ASCP, Mercy Hospital School of Medical Technology, 1965.

Young, Joseph, BS, University of Maryland, 1970; MS, University of Maryland, 1973; PhD, University of Maryland, 1976.

**OBSTETRICS AND GYNECOLOGY***Professor*

Haskins, Arthur L., chairman; BA, University of Rochester, 1938; MD, 1943.

Allen, Willard M., BS, Hobart College, 1926; MS, University of Rochester, 1929; MD, 1932.

Ances, Isadore G., BS, University of Maryland, 1956; MD, 1959.

Fajer, Abram B., BS, Sao Paulo College, 1945; MD, University of Sao Paulo, 1951.

Kaltreider, D. Frank, BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.\*

VillaSanta, Umberto, MD, University of Padua, Italy, 1950.

*Associate Professor*

Cornbrooks, Ernest I., Jr., AB, St. John's College, 1931; MD, University of Maryland, 1935.\*

Durkan, James P., AB, Loyola College, 1955; MD, University of Maryland, 1959.

Middleton, Edmund B., MD, University of Maryland, 1949.

Munford, Richard S., BA, University of Rochester, 1951; MD, Yale University, 1951.\*

Raiti, Salvatore, MB, BS, University of Queensland, 1958; DCH, Institute of Child Health, London, 1961; MRCP, University of Glasgow, 1962.

Wilson, Fitzpatrick, BS, The City College, New York, 1953; MD, SUNY, Downstate Medical Center, 1957.\*

*Assistant Professor*

Barnett, Robert M., BS, College of Charleston, 1951; MD, University of Maryland, 1955.\*

Diggs, Everett S., BS, University of Maryland, 1934; MD, 1937.\*

Granados, Juan L., MD, University of Madrid, 1966.

Moszkowski, Erica F., BS, Liceo Nacional de Senoritas NI, 1946; MD, University of Buenos Aires, Argentina, 1954.\*

Mould, Leslie L., MD, Queen's University, Ontario, 1952.\*

Rivera-Rivera, Ernesto, MD, University of Maryland, 1966.

Schwartz, Benson C., MD, University of Maryland, 1948.\*

*Instructor*

Kho, Ronald L.S., MD, University of Indonesia, 1963.\*

Randall, Louis L., BS, Morgan State College, 1953; MD, University of Maryland, 1957.\*

*Associate*

Levin, Norman, MD, University of Maryland, 1947.\*

Wolk, Barry M., BA, Ohio State University, 1968; MD, University of Maryland, 1972.\*

*Emeritus*

Reese, John M., MD, University of Maryland, 1920.

Siegel, Isadore A., AB, Johns Hopkins University, 1919; MD, 1923.

**OPHTHALMOLOGY***Professor*

Richards, Richard D., chairman; AB, University of Michigan, 1948; MD, 1951; MSc, State University of Iowa, 1957.

Schocket, Stanley S., BS, University of Maryland, 1955; MD, 1959.

*Associate Professor*

Beverly, Lois A., BS, Howard University, 1956; MD, University of Maryland, 1960.

Katzen, Leeds E., BS, University of Maryland, 1958; MD, 1964.\*

Varma, Shambhu, BS, University of Allahabad; MSc, 1957; PhD, 1964.

*Assistant Professor*

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 Creamer, John J., BS, University of Maryland, 1950; BS (pharmacy), 1953; MD, New York Medical College, 1960.\*  
 Feinberg, Gilbert N., BS, Johns Hopkins University, 1955; MD, University of Maryland, 1959.\*  
 Goldberg, Julian R., AB, Johns Hopkins University, 1952; MD, University of Maryland, 1955.\*  
 Hameroff, Stephen B., BS, University of Maryland, 1962; MD, 1966.  
 Jones, Thomas C., BS, Florida A&M University, 1942; MD, Meharry Medical College, 1945.\*  
 Leffler, Martha B., BS, Iowa State University, 1962; MD, Johns Hopkins University, 1966.\*  
 Meisels, Alfred, MD, University of Vienna, 1958.\*  
 Nirankari, Verinder S., MBBS, Medical College of Amritsar, 1968; DOMS, 1971.  
 Ross, Jerome, BS, University of Maryland, 1957; MD, 1960.\*  
 Susel, Richard N., BS, University of Maryland, 1962; MD, 1966.\*

*Instructor*

- Brull, Stanley, BS, Loyola College, 1964; MD, University of Maryland, 1969.\*  
 Bruther, William F., BS, Mt. St. Mary's College, 1961; MD, University of Maryland, 1966.\*  
 Ehrlich, Gary L., BS, Dickinson College, 1961; MD, University of Maryland, 1965.\*  
 Frankel, Joshua, BA, Brooklyn College, 1962; MSc, New York University, 1965; MD, University of Maryland, 1971.\*  
 Gambrill, John Jr., BS, Howard University, 1966; MD, University of Maryland, 1972.\*  
 Kasper, Robert L., BS, University of Miami, 1960; MD, 1963.\*  
 Kaur, Suringder, BA, Punjab University, 1957; MD, 1963.\*  
 Kohlhepp, Paul A., BS, Loyola College, 1958; MD, University of Maryland, 1962.\*  
 Kolker, Richard J., BS, University of Pennsylvania, 1965; MD, University of Maryland, 1970.\*  
 Kronthal, Alfred, BS, Loyola College, 1957; MD, University of Maryland, 1961.\*  
 Lakhanpal, Vinod, MBBS, Medical College of Amritsar, 1967; MS, Postgraduate Institute of Medical Education and Research, Chandigarh, 1971.  
 Liss, Robert, BA, George Washington University, 1964; MD, 1967.  
 O'Rourke, Thomas R., Jr., BS, University of Maryland, 1957; MD, 1962.\*  
 Parran, Jay N., BS, Case Institute, 1965; MD, University of Maryland, 1970.\*  
 Silver, Allen E., BA, Wayne State University, 1959; MD, 1963.\*  
 Weiner, Barry M., AA, Baltimore Junior College, 1963; BS, Pennsylvania College Optometry, 1965; OD, 1967.

*Associate*

- Tittel, Paul, BS, Johns Hopkins University, 1957.

**PATHOLOGY***Professor*

- Trump, Benjamin F., chairman; BA, University of Missouri, 1953; MD, University of Kansas, 1957.  
 Fisher, Russell S., forensic pathology; BS, Georgia School of Technology, 1937; MD, Medical College of Virginia, 1942.\*  
 Garcia, Julio H., BS, National College of St. Bartholomew, Bogota, 1951; MD, National University of Colombia, 1958.  
 Iseri, Oscar A., BS, Antioch College, 1952; MD, Harvard University, 1956.  
 Middlebrook, Gardner, AB, Harvard College, 1938; MD, 1944.  
 Rasmussen, Peter, MD, Temple University, 1952.  
 Smith, Andrew G., BS, Pennsylvania State College, 1940; MS, University of Pennsylvania, 1947; PhD, 1950.  
 Tigertt, William D., MD, Baylor University, 1937; AB, 1938.  
 Toker, Cyril, MD, University of the Witwatersrand Medical School, 1951; MCh., 1962.  
 Wood, Colin, anatomical pathology; MB, ChB, Birmingham University, 1946; MD, 1957.

*Associate Professor*

- Anthony, Ronald L., BA, Susquehanna University, 1961; PhD, University of Kansas, 1965.  
 Arstila, Antti U., MD, University of Turku, Finland, 1965.\*  
 Dawson, R. Ben, AB, BS, Hampden-Sydney College, 1958; MD, University of Virginia, 1963.  
 Janss, Douglas H., PhD, University of Tennessee, 1969.\*



- Kim, Kook M., MD, Seoul National University, 1960.  
 Knoblock, Edward C., clinical chemistry; AB, Western State College of Colorado, 1942; MS, University of Maryland, 1959.  
 Laiho, Kauno U., MD, University of Helsinki, 1967.  
 McDowell, Elizabeth M., BVet Med., Royal Veterinary College, University of London, 1964; BA, University of Cambridge, 1968; PhD, 1971.  
 Masters, Jason M., head, Medical Technology Program; BA, High Point College, 1951; MA, Sul Ross State College, 1956; PhD, University of Maryland, 1965.  
 Mergner, Wolfgang, MD, Justus Liebig University, Giessen, Germany, 1961.  
 Merenyi, Dezso K., MD, Pecs, Hungary, 1944.\*  
 Oster, Walter F., BS (pharmacy), University of Maryland, 1956; MD, 1961.\*  
 Saladino, Andrew J., BS, Georgetown University, 1960; MD, 1964.\*  
 Sutherland, John C., AB, Northwest Nazarene College, 1941; MD, Marquette, 1946.  
 Toll, M. Wilson, MSc, McGill University, 1935; MD, 1940.

#### *Assistant Professor*

- Adams, John E., BS, University of Maryland, 1954; MD, 1956.\*  
 Aronson, Roland S., BS, University of Vermont, 1928; MD, 1931.\*  
 Axelsen, Roy A., BS, University of Queensland, 1966; BcMD, 1968.  
 Bauer, Frederick W., BA, University of Colorado, 1957; MD, Albany Medical College, 1962.\*  
 Bhagavan, Belur S., MBBS, R. G. Kar Medical College, Calcutta, 1958.\*  
 Brown, Charles, AB, Princeton University, 1954; MD, University of Pennsylvania, 1958.\*  
 Caplan, Yale H., BS, University of Maryland, 1963; PhD, 1968.\*  
 Dhar, Jyotsna K., BS, Calcutta University, 1956; MD, Nilratan Sircar Medical College, 1962.\*  
 Dixon, Ann M., MD, University of Edinburgh, 1966.\*  
 Dobrow, David A., BA, University of Virginia, 1961; MD, 1965.\*  
 Fakhruzzaman, Abu N., MBBS, Dacca University, 1955.\*  
 Fazekas, Victor A., MD, George Washington University, 1960.\*  
 Graham, Richard R., BS, Louisiana University, 1968.\*  
 Griggs, E. Allen, BA, Virginia Military Institute, 1964; MD, University of Virginia, 1968.\*  
 Guard, Hormez R., MBBS, University of Bombay, 1948; MD, 1951.\*  
 Guerin, Paul F., forensic pathology; AB, Wittenburg College, 1942; MD, University of Pennsylvania, 1945.\*  
 Hall-Craggs, Mary, MBBS, The London School of Medicine for Women, 1950.  
 Hicken, William J., BA, Loyola College, 1954; MD, University of Maryland, 1958.\*  
 Hillman, Elizabeth A., BA, Russell Sage College, 1960; PhD, Duke University, 1972.  
 Hinton, David, BS, Mississippi College, 1965; MS, University of Mississippi, 1967; PhD, 1969.  
 Jiji, Rouben M., MD, Royal College of Medicine, Baghdad, Iraq, 1950.  
 Jiji, Violet, MD, Royal College of Baghdad, 1950.\*  
 Jones, Raymond T., BS, Old Dominion University, 1968; MS, University of Delaware, 1970; PhD, University of Maryland, 1974.  
 Kahng, Myong W., BS, Seoul National University, 1957; MS, University of Maryland, 1962; PhD, 1967.  
 Kime, Watson P., BSc, University of Wales, 1950; MB, BCH, Welsh National School of Medicine, 1953.\*  
 King, Walter B., Jr., AB, University of California, 1948; MD, Stanford University, 1954.\*  
 Koch, Thomas R., BS, Lebanon Valley College, 1966; PhD, University of Maryland, 1970.  
 Lancaster, Robert G., BS, Gonzaga University, 1952; MD, University of Maryland, 1955.\*  
 Libonati, Joseph, BS, St. Joseph's College, 1963; MS, Duquesne University, 1965; PhD, University of Maryland, 1968.  
 Lindado, Ramiro R., MD, Javeriana University, 1968.  
 Ling, Virginia, MD, University of Madrid, University of Zaragoza, Spain, 1961.\*  
 Lyn, Dwo, PhD, University of Pennsylvania, 1970.\*  
 Miller, Roger, AB, Dartmouth College, 1959; MD, Jefferson Medical College, 1963.\*  
 Morton, F. Bert, BA, Case Western Reserve University, 1963; MD, University of Maryland, 1968.\*  
 Nipper, Henry, AB, Emory University, 1960; MS, Purdue University, 1966; PhD, University of Maryland, 1971.\*  
 Orbegoso, Carlos M., MD, San Marcos University, 1961.\*  
 Pentilla, Matti A., MD, University of Helsinki, 1964.\*  
 Petrucci, John, BS, Fordham University, 1952; MD, University of Geneva, 1957.\*

- Reggiardo, Zulema R., BS, College National Rosario, Argentina, 1951; PhD, University National of Litoral, Argentina, 1958.
- Riekstniece, Emilia, PhD, University of California, Berkeley, 1970.
- Rodriguez, Ferdinand C., MD, University of Philippines, 1965.\*
- Rubin, H. Robert, BA, Emory University, 1967; MD, University of Florida, 1971.\*
- Sheehan, John P., AB, Seton Hall University, 1961; MD, New Jersey College of Medicine, 1956.\*
- Sherrer, Edward L., Jr., BS, Bowling Green State University, 1952; MSc, Ohio State University, 1953; MD, 1958.\*
- Shin, Moon L., MD, Soo Do Medical College, Seoul, Korea, 1962.\*
- Tang, Chik-Kwun, MD, National Defense Medical Center, Taipei, Taiwan, 1967.
- Taylor, James E., BS, University of Maryland, 1956; MD, 1958.\*
- Tiamson, Esperanza, MD, University of Santo Tomas, 1954.\*
- Thompson, Bernard C., BS, Mount Saint Mary's College, 1970; PhD, University of Maryland, 1976.\*
- Wenk, Robert E., BA, New York University, 1959; MD, University of Louisville, 1963.\*
- Wilde, Kenneth, BA, Kutztown State College, 1965; MS, University of Maryland, 1969; PhD, 1974.

### *Instructor*

- Baker, David C., BS, Kansas State University, 1968; MS, University of Missouri, 1974.
- Barret, Lucinda, BA, University of Connecticut, 1963; MA, University of Kansas, 1966.
- Bourke, Barbara J., BS, University of Maryland, 1974.
- Brueck, M. Lynne, BS, University of Southern Mississippi, 1973.
- Chang, Seung-Han, BS, Kyung Hec University, Seoul, Korea, 1963; MS, 1969.
- Ducan, Craig E., BS, University of Washington, 1965; MD, 1969.\*
- Gonzalez, Karen M., BS, University of Maryland, 1971.
- Harmening, Denise M., MS, MT (ASCP), BS, University of Maryland, 1974; MS, 1976.
- Heatfield, Barry M., BA, University of California, 1962; PhD, 1969.
- Hill, Elizabeth S., BS, Temple University, 1946.
- Husain, Muhammad M., MD, Dacca Medical College, 1967.
- Kamijyo, Yoshinari, MD, University of Kyoto, Japan, 1960.
- Knust, Elizabeth A., BS, University of Oklahoma, 1971.
- LeGendre, Glenda, BS, University of Maryland, 1971; MS, 1974.
- Naylor, Bess J., BS, University of Maryland, 1974.\*
- Park, Jongsei, BS, Seoul National University, 1966.
- Pool, Charlotte R., University of Louisville.
- Reese, Joan, AB, Dunbarton College of Holy Cross, 1961; MEd, Shippensburg College, 1975.
- Seiguer, Alberto C., MD, University of Buenos Aires, 1967.
- Walsh, Delores C., BS, St. Agnes, Baltimore, 1969.

### *Associate*

- Abbott, Lee J., BS, Florida State University, 1973; MS, Veteran's Administration Hospital, West Haven, Conn., 1975.
- Berezesky, Irene K., BA, Boston University, 1958.
- Hassman, Elaine, BS, University of Pittsburgh, 1953.
- Hess, Helene, BS, St. Joseph College, 1975.
- Jesudason, Michael L., MBChB, University of Edinburgh, 1967; FRCP(C), Royal College of Physicians and Surgeons, 1974.
- Kaiser, Hans E., BS, University of Rostock, Germany, 1948; PhD, Eberhard-Karls University, Tuebingen, Germany, 1958.\*
- Moore, Samuel, BS, Morgan State College, 1953; MS, University of California, 1973.
- Pendergrass, Robert, University of North Carolina.
- Pfaller, Walter, MD, University of Innsbruck, 1971.
- Phelps, Patricia C., AB, Brown University, 1952.
- Sanefuji, Hayato, MD, Yamaguchi University, 1969.
- Sato, Toshihide, MD, Nagoya City University, 1961; MS, 1963.
- Schurch, Walter, MD, University of Zurich, 1968.
- Smith, Mary A., BA, West Virginia University, 1961; MS, 1963.
- Vigorito, Robert D., BA, Southern Connecticut State College, 1970; MS, Quinnipiac College, 1976.
- Weavers, Barry A., Paddington Technical College, 1965.\*

## PEDIATRICS

### *Professor*

- Cornblath, Marvin, chairman; MD, Washington University, St. Louis, 1947.  
 Baldwin, Ruth W., BS, University of Maryland, 1942; MD, 1943.  
 Berman, Michael A., MD, Upstate Medical Center, State University of New York, 1967.  
 Clemmens, Raymond L., BS, Loyola College, 1947; MD, University of Maryland, 1951.  
 Finkelstein, Abraham H., MD, University of Maryland, 1927.\*  
 Heald, Felix P., AB, Colorado College, 1943; MD, University of Pennsylvania, 1946.  
 Hepner, Walter, BS, University of Chicago, 1941; MD, 1944.  
 Kappelman, Murray, associate dean of student affairs and medical education; BS, University of Maryland, 1951; MD, 1955.  
 Lentz, George A., Jr., AB, Johns Hopkins University, 1953; MD, University of Maryland, 1957.  
 Ozand, Pinar, BS, Yenisehir Maaril College, 1950; MD, Ankara University Medical School, 1956.  
 Schaffer, Alexander J., AB, Johns Hopkins University, 1920; MD, 1923.\*  
 Steinschneider, Alfred, BA, New York University, 1950; MA, University of Missouri, 1952; PhD, Cornell University, 1955; MD, SUNY Upstate Medical Center, 1961.  
 Tildon, James Tyson, BS, Morgan State College, 1954; PhD, Johns Hopkins University, 1965.  
 Walker, Stuart H., AB, Middlebury College, 1942; MD, New York University, 1945.  
 Weaver, Karl H., AB, West Virginia University, 1950; MD, University of Maryland, 1953.

### *Associate Professor*

- Balis, Sophia, DDS, University of Athens, 1957; DDS, University of Toronto, 1966.\*  
 Brodell, Robert, BA, Washington and Jefferson College, 1953; MD, Western Reserve, 1957.\*  
 Davens, Edward, AB, Stanford University, 1932; MD, 1938.\*  
 Gorten, Martin K., BA, Western Maryland College, 1943; MD, University of Maryland, 1949.\*  
 Grubb, Wilson, AB, Johns Hopkins University, 1932; MD, 1937.\*  
 Gutberlet, Ronald L., AB, Washington and Lee University, 1956; MD, University of Maryland, 1961.  
 Huang, Shih-Wen, MD, National Taiwan University, 1962.  
 Hudson, Barbara W., AB, Cornell University, 1949; RN, Columbia Presbyterian School of Nursing, 1952; MD, College of Physicians and Surgeons, 1956.\*  
 Irwin, Robert C., AB, Georgetown University, 1953; MD, University of Maryland, 1959.\*  
 Kenny, Thomas J., AB, Washington and Lee University, 1954; MA, Peabody College, 1959; PhD, Catholic University of America, 1969.  
 Khan, Misbah, MBBS, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.  
 Maclaren, Noel K., MBChB, Otago Medical School, NA, 1963.  
 Maher, Edward E., BS, University of Notre Dame, 1954; MD, Georgetown University, 1958.\*  
 Nair, Prasanna, MBBS, University of Delhi, 1956.  
 Quivers, William, BS, Hampton Institute, 1942; MD, Meharry Medical College, 1953.\*  
 Raiti, Salvatore, MBBS, University of Queensland, 1958.  
 Ruley, Edward J., BS, The Citadel, 1960; MD, University of Maryland, 1964.  
 Seabold, William M., AB, University of Maryland, 1928; MD, 1931.  
 Schwartz, Allen D., BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.  
 Sila, Ulgan, AB, American Academy for Girls, Turkey; MD, University of Istanbul, Turkey, 1956.\*  
 Stine, Oscar C., BA, Oberlin College, 1950; MD, George Washington University, 1954; DrPH, Johns Hopkins University, 1960.\*

### *Assistant Professor*

- Bauer, Rudolph, PhD, Catholic University of America, 1970.\*  
 Berman, Wulfred, MB, ChB, University of Capetown, 1958; DTM&H, University of Liverpool, 1962.\*  
 Burgan, Paul, BS, University of Maryland, 1956; MD, 1962.\*  
 Caplan, Lester H., AB, Johns Hopkins University, 1936; MD, University of Maryland, 1940.\*  
 Dawson, Robert, BS, University of Maryland, 1956; MD, 1959.\*  
 Felice, Marianne E., BA, Carlow College, 1966; MD, Pennsylvania State University, 1972.  
 Fleming, Gary, BS, Franklin and Marshall College, 1957; MD, University of Maryland, 1966.\*  
 Fox, Mary Alice, AB, Woman's College, University of North Carolina, 1944; MD, University of Pennsylvania, 1948.\*



- Furth, Mary L., BS, University of Maryland, 1953; MD, 1957.\*
- Graham, David B., BS, Allegheny College, 1964; MD, University of Rochester Medical School, 1970.
- Gumbinas, Marie, BA, University of Chicago, 1963; MD, 1966.
- Howard, Lenore W., medical psychology; AB, University of Connecticut, 1957; MA, University of New Hampshire, 1959.
- Jensen, Philip J., AB, University of Virginia, 1947; MD, Johns Hopkins University, 1952; MSc, University of Pennsylvania, 1960.
- Kaiser, Theodore H., MD, Johns Hopkins University, 1949.\*
- Khan, Mushtaq, BS, College of Animal Husbandry, Lahore, 1960; MS, Montana State University, 1962; PhD, Washington State University, 1968.
- Lavy, Richard C., BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.\*
- Luddy, Ruth E., BA, Notre Dame of Maryland, 1960; MD, University of Maryland, 1964.
- Malcotti, Marvin M., BA, Franklin and Marshall College, 1961; MA, University of Toronto, 1963; PhD, 1968.\*
- Mosser, Robert S., BS, University of Maryland, 1949; MD, 1951.
- Mullan, Paul A., MD, University of Maryland, 1957.\*
- Norton, Clayton, AB, Johns Hopkins University, 1949; MD, 1953.\*
- O'Mansky, Boris, MD, Duke University, 1957.\*
- Randol, Charles L., AB, Harvard College, 1938; MD, Johns Hopkins University, 1943.\*
- Reilly, Charles M., AB, Swarthmore College, 1951; MD, University of Pennsylvania, 1955.\*
- Rinaldi, Robert T., AB, St. Michael's College, 1963; MA, Fairfield University, 1966; MEd, University of New Hampshire, 1968.\*
- Robinson, Sherman S., BS, Davis and Elkins College, 1953; MD, Georgetown University, 1957.\*
- Saadat, Mahoochehr, MD, University of Tehran College and Medical School, 1961.\*
- Schiffman, Gilbert B., AB, George Washington University; OD and BS, North Illinois College of Optometry; MEd, Temple University; DEd, University of Maryland.\*
- Sigman, Bernice, MD, University of Maryland, 1960; MS, Washington University, 1966.
- Standiford, Willard, AB, Johns Hopkins University, 1956; MD, University of Maryland, 1960.\*
- Vance, Arnold, BS, University of Maryland, 1950; MD, 1953.\*
- Wald, Ellen R., BS, Brooklyn College, 1964; MD, SUNY, Downstate, 1968.
- Wasserman, Martin, BA, Williams College, 1964; MD, Johns Hopkins University, 1968.
- White, Benjamin, BA, Furman University, 1941; MD, Medical College of Georgia, 1946.\*
- Wolfe, Herbert J., BS, University of Pittsburgh, 1948; MEd, 1952.\*
- Zielke, Horst R., BS, University of Illinois, 1964; PhD, Michigan State University, 1968.\*

### *Instructor*

- Ashman, Ruth S., BA, Barnard College, 1965; MD, New York University, 1969.\*
- Bernstein, Leroy, BA, University of Colorado, 1959; MD, George Washington University, 1968.\*
- Cosby, Marilyn K., AB, Indiana University, 1965; DDS, 1971; Certification in Pedodontics, Ohio State Dental College, 1973.\*
- Fortier, Dwight, BA, University of Maryland, 1962; MD, 1966.\*
- Francis, Earlie, BS, Howard University, 1960; MD, University of Maryland, 1964.\*
- Gordon, Albert, BS, University of Maryland, 1960; MD, 1964.\*
- Green, Karl M., BS, University of Maryland, 1955; MD, 1959.\*
- Guarnieri, Susan R., BS, St. Mary of the Springs College, 1963; MD, Ohio State University, 1966; MPH, Johns Hopkins University, 1969.\*
- Hayes, Alice, AB, University of Maryland, 1959; MD, 1963.\*
- Hilger, Thelma, BA, State University of Iowa, 1950; MS, University of Pittsburgh, 1952.
- Katkov, Eric A., BA, University of Virginia, 1965; DDS, University of Maryland, 1970.\*
- Katz, Morton I., BS, University of Maryland, 1963; DDS, 1965.\*
- Kaufman, Felix L., BA, Franklin and Marshall College, 1965; MD, University of Maryland, 1969.\*
- Khodabandelou, Mohammad, MD, Pahlavi University, Iran, 1960.\*
- Layton, Richard, BA, University of Richmond, 1965; MD, University of Virginia, 1968.\*
- Lee, Hae, MD, Soo Do Medical College of Seoul, Korea, 1961.\*
- Leffler, Allan, BS, Iowa State, 1962; MD, Johns Hopkins University, 1966.\*
- Murakoshi, Kozo, MD, Okayama University Medical School, 1968.\*
- Padousis, Robert, BS, University of Maryland, 1961; DDS, 1964.\*

- Pal, Bimal, MBBS, University of Calcutta, 1959; DCH, Royal College of Physicians in Glasgow, 1963; MRCP, 1967; MD, FLEX, Maryland, 1971.
- Rector, Joanne C., BA, Vanderbilt University, 1955; MSW, Smith College, 1963; ACSW, CSW, New York State, 1967; PhD, Colorado State Christian College, 1973.
- Rosenstein, Alfred B., AB, Western Maryland College, 1961; MD, University of Maryland, 1965.\*
- Ruff, Elizabeth, MB, ChB, University of Aberdeen, Scotland, 1968.\*
- Said, Dhia, MB, ChB, Baghdad University, 1956.\*
- Santos, Arturo, AA, University of Philippines College, 1963; MD, 1967.\*
- Trias, Estrellita, MD, University of the Philippines, 1965.\*
- Vorasubin, Yupadd, MD, Mahidol University, Thailand, 1967.
- Wolff, Theodore, MD, Jefferson Medical College, 1966.\*

#### *Emeritus*

- Bradley, J. Edmund, BS, Loyola College, 1928; MD, Georgetown University, 1932.
- Glick, Samuel S., BA, Johns Hopkins University, 1920; MD, University of Maryland, 1925.

### **PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS**

#### *Professor*

- Albuquerque, Edson X., chairman; BS, Salesiano College, Recife, 1953; MD/PhD, University of Recife and São Paulo, College of Medicine, Brazil, University of Lund, Sweden, 1959/1962/1965.
- Byron, J.W., BS, Fordham University, 1952; MS, Philadelphia College of Pharmacy and Science, 1955; PhD, University of Buffalo, 1959.
- Eldefrawi, Mohyee E., BS, University of Alexandria, Egypt, 1953; PhD, University of California, Berkeley, 1960.

#### *Associate Professor*

- Eldefrawi, Amira T., BS, University of Alexandria, Egypt, 1957; PhD, University of California, Berkeley, 1960.
- Kauffman, Frederick C., BA, Knox College, 1958; PhD, University of Illinois, 1965.

#### *Assistant Professor*

- Brookes, Neville, MPS, Bath University, U.K., 1962; PhD, Leeds University Medical School, U.K., 1967.
- Burt, David, AB, Amherst College, 1965; PhD, Johns Hopkins University, 1972.
- Hudson, Carol S., BA, Southern Illinois University, 1963; MA, 1965; PhD, University of Texas, 1971.
- Rash, John E., BA, University of Texas, 1965; MA, 1967; PhD, 1969.
- Warnick, Jordan E., BS, Massachusetts College of Pharmacy, 1963; PhD, Purdue University, 1968.
- Weinreich, Daniel, BS, Bethany College, 1964; PhD, University of Utah, 1970.

#### *Associate*

- Adler, Michael, BS, City College of New York, 1971; PhD, State University of New York at Buffalo, 1976.
- Deshpande, S. S., B.Pharm., Gujrat University, India, 1954; MS, University of Southern California, Los Angeles, 1958; PhD, University of Florida, 1965.
- Garrison, David, BS, Purdue University, 1968; PhD, 1973.
- Gruol, Donna, BS, State University of New York at Albany, 1966; MS, 1972; PhD, Illinois Institute of Technology, 1975.
- Mansour, Nabil A., BSc, University of Alexandria, Egypt, 1962; MSc, 1965; PhD, The Moscow Academy of Science, 1969.
- Oliveira, Antonio Carlos, MD, Faculty of Medicine and Biological Sciences of Botucatu, São Paulo, Brazil, 1970; PhD, 1974.
- Tiedt, Thomas, BS, Gannon College, 1972; PhD, University of Cincinnati, 1976.
- Tsai, Ming-Cheng, BS, Kao-Hsiung Medical College, 1966; MS, National Taiwan University, 1971; PhD, 1975.

#### *Emeritus*

- Krantz, John C., Jr., BS, University of Maryland, 1923; MS, 1924; PhD, 1928.

## PHYSIOLOGY

### *Professor*

- Blake, William D., chairman; AB, Dartmouth College, 1940; MD, Harvard Medical School, 1943.
- Barracough, Charles A., BS, St. Joseph's College, 1949; MS, Rutgers University, 1952; PhD, 1953.
- Brinley, F.J., AB, Oberlin College, 1951; MD, University of Michigan, 1955; PhD, Johns Hopkins University, 1961.
- Channing, Cornelia P., BA, Hood College, 1961; MA, Harvard University, 1963; PhD, 1965; ScD (honorary), Hood College, 1972.
- Fajer, Abram B., MD, University of São Paulo, 1951.
- Glaser, Edmund M., BEE, The Cooper Union, 1949; MSE, Johns Hopkins University, 1954; DEng, 1960.
- Greisman, Sheldon E., MD, New York University, 1949.\*
- Mason, G. Robert, BA, Oberlin College, 1955; MD, University of Chicago, 1957; PhD, Stanford University, 1968.\*
- Pinter, Gabriel G., MD, University Medical School, Budapest, 1951.

### *Associate Professor*

- Goldman, Lawrence, BS, Tufts University, 1958; PhD, University of California at Los Angeles, 1964.
- Karpeles, Leo M., BS, University of North Carolina, 1941; MD, University of Washington, 1955.
- Ruchkin, Daniel S., BE, Yale University, 1956; ME, 1957; DEng, 1960.

### *Assistant Professor*

- Abzug, Charles, SB, Massachusetts Institute of Technology, 1964; MS, New York Medical College, 1967; PhD, 1971.
- Batta, Satish K., BVSc & AH, College of Veterinary Science, Hissar, India, 1967; MSc, PGI Chandigarh, India, 1969; DSc, Sussex College, England, 1974.
- Horn, Lyle W., BS, University of Colorado, 1966; PhD, Johns Hopkins University, 1973.
- Jurf, Amin N., BA, Western Maryland College, 1959; PhD, University of Maryland, 1966.\*
- Lo, Chu-shek, BS, National Taiwan University, 1962; MS, University of Notre Dame, 1965; PhD, Indiana University, 1972.
- Ormsbee, Herbert S., III, BA, Lawrence University, 1970; MS, University of Wisconsin, 1972; PhD, 1974.\*
- Tiffert, Teresa, BS, Universidad Peruana Cayetano Heredia, 1971; MD, 1972; MS, 1973.
- Urbaitis, Barbara K., BA, Hunter College, 1960; MA, 1965; PhD, Cornell University, 1968.
- Wise, Phyllis M., BA, Swarthmore College, 1967; MA, University of Michigan, 1969; PhD, 1972.

### *Associate*

- Stone, Sarah L., BS, Wake Forest University, 1970; PhD, University of Virginia, 1976.

### *Emeritus*

- Smith, Dietrich C., PhD, Harvard University, 1928.

## PRIMARY CARE PROGRAM

- Spicer, William S., Jr., professor of medicine and director; BS, University of Southern California, Los Angeles, 1944; MD, University of Kansas, 1949.

### *Medicine*

- Al-Ibrahim, Mohamed S., assistant professor; GCE, Oxford University, 1962; MB, ChB, Baghdad College of Medicine, 1967.
- Kushner, Herbert A., associate professor; AB, Franklin and Marshall College, 1956; MD, Johns Hopkins University, 1960.
- Moran, Marguerite T., assistant professor; BS, St. Johns University, 1965; MD, New York Medical College, 1969.
- Quinlan, James A., assistant professor; BS, University of Maryland, 1962; MD, 1966.



Rapoport, Morton I., professor; BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.

### *Nursing*

Booth, Rachel Z., assistant professor; BSN, University of Maryland School of Nursing, 1968; MS, 1970.

### *Pediatrics*

Brodell, Robert D., associate professor; BA, Washington and Jefferson College; MD, Western Reserve University.

Khan, Misbah, associate professor; MBBS, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.

### *Pharmacy*

Kerr, Robert A., associate professor; BA, University of California, Davis, 1966; Pharm.D., University of California, San Francisco, 1970.

Wiser, Thomas H., assistant professor; BS, University of Minnesota, 1971; Pharm.D., 1973.

## **PSYCHIATRY**

### *Professor*

Monroe, Russell R., chairman; director, Institute of Psychiatry and Human Behavior; BS, Yale University, 1942; MD, 1944.

Balis, George U., MD, National University of Athens, 1954.

Bartemeier, Leo, BA, Catholic University of America, 1914; MA, 1916; MD, Georgetown Medical School, 1920.\*

Bender, Lauretta, BS, University of Chicago, 1918; MA, 1923; MD, State University of Iowa, 1926.\*

Brody, Eugene B., AB, MA, University of Missouri, 1941; MD, Harvard Medical School, 1944.

Carpenter, William T., Jr., BA, Wofford College, 1958; MD, Bowman-Gray School of Medicine, 1962.

Friedman, Stanford, psychiatry and human development; director, Division of Child and Adolescent Psychiatry; BA, Antioch College, 1953; MD, University of Rochester, 1957.

Gantt, Horsley, BS, University of North Carolina, 1917; MD, University of Virginia, 1920.\*

Grenell, Robert G., neurobiology; BS, College of the City of New York, 1935; MS, New York University, 1936; PhD, University of Minnesota, 1943.

Haley, Jay D., BA, UCLA, 1948, BLS, University of California, 1951; MA, Stanford University, 1953.\*

Huffer, Virginia, BS, University of Maryland, 1940; MD, 1950.

Lisansky, Ephraim T., AB, Johns Hopkins Hospital, 1933; MD, University of Maryland, 1937.\*

Lynch, James J., psychology; BS, Boston College, 1962; MA, Catholic University, 1964; PhD, 1965.

Savage, Charles, BA, Yale University, 1939; MS, University of Chicago, 1943; MD, 1945.\*

Schnaper, Nathan, BS, Washington College, 1940; MD, University of Maryland, 1949.\*

Siegmán, Aron W., psychology; BA, City College of New York, 1952; University of Wisconsin, 1954; PhD, Columbia University, 1957.\*

Weintraub, Walter, BA, New York University, 1948; MD, University of Geneva, 1951.

### *Associate Professor*

Ascher, Eduard, BS, Washington University, 1942; MD, 1942.\*

Bosma, Willem G.A., MD, University of Amsterdam, 1950.

Clemmens, Raymond L., BS, Loyola College, 1947; MD, University of Maryland, 1951.\*

David, Henry P., psychology; BA, University of Cincinnati, 1948; MA, 1949; PhD, Columbia University, 1951.\*

Donner, Lawrence, clinical psychology; BA, Rutgers University, 1962; MS, 1965; PhD, 1967.

Gibson, Robert W., MD, University of Pennsylvania, 1948.\*

Godenne, Ghislaine D., child psychiatry; BS, University of Louvain, Belgium, 1948; MD, 1952.\*

Glaser, Kurt R., MD, University of Lausanne, 1939; MSc (pediatrics), University of Illinois, 1948.\*

Gray, Sheila Hafter, BA, Brooklyn College, 1950; MA, New School of Social Research, 1954; MD, Harvard Medical School, 1958.\*

- Gross, Herbert S., BA, Yeshiva College, 1956; MD, Albert Einstein College of Medicine, 1960.
- Holden, William, BS, Marquette University, 1948; MD, 1952.\*
- Hunt, Gerard, sociology; BS, Fordham University, 1959; MA, Emory University, 1962; PhD, University of North Carolina, 1969.
- Kamback, Marvin C., BA, University of South Dakota, 1961; MD, 1962; PhD, Vanderbilt University, 1965.
- Kohlmeyer, Werner A., MD, University of Göttingen, Germany, 1945.\*
- Lion, John R., AB, Harvard University, 1960; MD, Albany Medical College of Union University, 1965.
- Mackie, James B., clinical psychology; BA, University of Utah, 1955; MA, 1957; PhD, 1963.
- Modarressi, Taghi M., MD, University of Tehran, 1959.
- Mott, Thurman, Jr., BS, Northwestern University, 1950; MD, 1952.
- Newman, Ruth G., psychology; BA, Rutgers University, 1937; MA, George Washington University, 1952; PhD, University of Maryland, 1958.\*
- Pande, Shashi Kumar, MBBS, GS Medical College, Bombay University, 1952.\*
- Plaut, S. Michael, psychology; BA, Adelphi University, 1965; PhD, University of Rochester, 1968.
- Rappeport, Jonas R., BS, University of Maryland, 1948; MD, 1952.\*
- Roseman, Morris, clinical psychology; BS, University of Maryland, 1942; BA, 1943; PhD, Duke University, 1949.\*
- Sakles, Constantine J., AB, University of Rochester, 1955; MD, Yale University, 1959.
- Sarles, Richard M., BS, Georgetown University, 1957; MD, University of Maryland, 1961.
- Scrattton, Joan M., psychiatric social work; BA, University of Melbourne, 1963; MSW, Smith College of Social Work, 1965.
- Shochet, Bernard, BS, University of Maryland, 1952; MD, 1954.\*
- Styrt, Jerome, BS, University of Chicago, 1940; MD, 1945.\*
- Tuerk, Isadore, BS, Johns Hopkins University, 1930; MD, University of Maryland, 1934.\*
- Veiga, Mariana, MD, Barcelona University, 1945.\*
- Weir, W. Douglas, AB, St. Johns College, 1958; MD, University of Maryland, 1964.
- Wurmser, Leon, MD, University of Zurich, 1955.

#### *Assistant Professor*

- Albright, Mary J., clinical psychology, BA, St. Mary of the Springs College, 1954; MA, Fordham University, 1956; PhD, 1966.
- Arana, Jose, MD, Universidad Peruana Cayetano Heredia, 1967.
- Armstrong, Judith, psychology; BA, Brooklyn College, 1962; PhD, University of California, 1968.\*
- Ault, Virginia L., RN, Union Memorial Hospital, 1945; BS, University of Maryland, 1950, MD, University of Vermont, 1959.
- Azcarate, Carlos, MD, Universidad Peruana Cayetano Heredia, 1968.
- Bacher, Norman M., BS, University of Maryland, 1949; MD, Chicago Medical School, 1954.\*
- Barcik, David J., psychology; BS, Western Michigan University, 1960; MA, 1961; PhD, University of Delaware, 1969.\*
- Barry, Ronald M., MD, Melbourne University, 1963.\*
- Bauer, Rudolph H., BA, Notre Dame Seminary, 1965; MA, Catholic University of America, 1967; PhD, 1970.\*
- Beran, Bohumil, MD, Charles University in Prague, Czechoslovakia, 1964.\*
- Boslow, Harold, MD, University of Virginia School of Medicine, 1939.
- Bradford, Norman H., clinical psychology; BA, University of Minnesota, 1956; PhD, 1964.
- Brown, George P., BS, Howard University, 1940; MD, 1944.\*
- Carney, Francis L., psychology; AB, Clark University, 1954; MA, American University, 1962; PhD, Catholic University, 1967.\*
- Chabon, Robert, BA, George Washington University, 1959; MD, Georgetown University, 1963.\*
- Chaiklin, Harris, psychiatric social work; BA, University of Connecticut, 1950; MSW, University of Wisconsin, 1953; PhD, Yale University, 1961.\*
- Cohen, George, BS, University of Pittsburgh, 1956; MS, 1963.
- Cohen, Irvin H., BA, Johns Hopkins University, 1944; MD, University of Maryland, 1947.\*
- Cohen, Sidney, BA, Boston University, 1964; MD, 1969.\*
- Cole, Kathleen, BS, Catholic University, 1968; MS, Wayne State University, 1970.
- Coleman, Peter J., BS, Seattle University, 1963; MD, University of Washington, 1967.\*
- Dashef, Stephen S., BA, Brown University, 1963; MD, University of Rochester, 1968.\*

- Davis, Nathan, BA, University of Chicago, 1950; MD, 1957.\*
- Dixon, William R., AB, Princeton University, 1940; MD, Johns Hopkins University, 1944.\*
- Dubin, Samuel, BA, Washington Square College, 1950; MD, Faculty of Medicine, University of Leiden, the Netherlands, 1957.\*
- Felice, Marianne, BA, Carlow College, 1966; MD, Pennsylvania State University, 1972.\*
- Fiedler, Kurt R., University of Berlin, 1949; MD, 1953.\*
- Fitzpatrick, William W., BS, Mercer University, 1941; MD, Emory University, 1944.\*
- Freedenburg, Daniel J., Jr., MD, University of Maryland, 1969.
- Frieman, Robert D., AB, University of California, 1960; MD, 1965.\*
- Gallahorn, George E., BS, Georgetown University, 1962; MD, University of Maryland, 1966.
- Gordon, Bernard S., AB, University of Michigan, 1937; MD, University of Louisville, 1942.\*
- Goshen, Charles, BA, Columbia College, 1964; MD, West Virginia University, 1968.\*
- Graham, David B., MD, University of Rochester, 1970.\*
- Haran, Judith F., psychiatric social work; BA, University of Maryland, 1969; MSW, 1973.\*
- Harbin, Henry T., BA, University of Virginia, 1968; MD, Medical College of Georgia, 1972.
- Harris, Roger, AB, University of Maryland, 1961; MD, 1968.\*
- Herts, John B., BA, Rutgers University, 1961; MD, Georgetown University, 1966.\*
- Holder, William L., AB, Emory University, 1949; MD, University of Maryland, 1953.\*
- Hulfish, Barbara, neurology; BA, American University, 1944; MD, University of Rochester, 1952.\*
- Isen, Alice, BA, University of Pennsylvania, 1963; MA, Stanford University, 1966; PhD, 1968.\*
- Jantz, Eleanor M., clinical psychology; BA, Northwestern University, 1953; MA, 1957; PhD, 1959.
- Jencks, Stephen F., AB, Harvard University, 1962; MD, 1967.\*
- Johnston, Daniel F., AB, Princeton University, 1952; MD, University of Maryland, 1956.\*
- Jones, Norma, psychiatric social work; AB, Morgan State College, 1957; MSW, Howard University, 1965.
- Karahasanoglu, Alp, MD, Hacettepe University, Ankara, Turkey, 1968; PhD, Biochem, 1970.
- Kemp, Katherine, AB, College of Notre Dame of Maryland, 1943; MD, University of Maryland, 1948.\*
- Kenny, Thomas J., AB, Washington & Lee University, 1954; MA, George Peabody College for Teachers, 1959; PhD, Catholic University of America, 1969.\*
- Kohn-Rabin, Nancy, BA, Oberlin College, 1965; PhD, University of Chicago, 1971.
- Lasson, Morris L., psychology; BA, New Israel College, 1960; MA, Loyola College, 1962; PhD, Catholic University, 1966.
- Laucks, Stanley P., psychology; BS, Ursinus College, 1943; MD, University of Pennsylvania, 1946.\*
- Leichtman, Sandra R., clinical psychology; BA, University of Michigan, 1966; PhD, University of North Carolina, 1971.
- Lewis, Harvey A., BS, Manhattan College, 1952; MD, Georgetown University, 1956.\*
- Lloyd, Dee, psychology; BA, University of Utah, 1956; MA, 1958; PhD, Ohio State University, 1961.\*
- Long, S. Eugene, BS, Wagner College, 1955; MD, George Washington University, 1959.\*
- Lucco, Alfred A., BA, Brown University, 1959; MA, University of Chicago, 1963; PhD, 1965.\*
- Lynch, Thomas, MB, BCh, University College of Dublin, Ireland, 1947; DPM, National University of Ireland, 1950.\*
- McAffee, Laurice L., AB, Stanford University, 1961; MD, Cornell University Medical College, 1965.\*
- McDaniel, Ellen, MD, University of Michigan, 1966.
- McDonald, Matthew, psychology; BA, University of Maryland, 1966; MA, 1969; PhD, 1971.\*
- McElroy, Evelyn, psychiatric nursing, BSN, University of Colorado, 1961; MS, University of Maryland, 1966; PhD, 1973.\*
- McLaney, Martha, psychiatric social work; BA, Towson State College, 1967; MSW, University of Maryland, 1968.
- Madden, Denis J., BA, St. Benedict's College, 1963; Ordination, St. Mary's School of Theology, 1967; MEd, Teacher's College, Columbia University, 1969; PhD, Notre Dame University, 1973.\*
- Magruder, William W., BS, Mississippi State College, 1942; MD, Duke University, 1944.\*
- Manzanera, Elena I., MS, Columbia University, 1967.
- Maxwell, Anabel, AB, University of Maryland, 1933; MSW, University of Pennsylvania, 1938.\*
- May, Gerald G., BA, Ohio Wesleyan University, 1962; MD, Wayne State University School of Medicine, 1965.



- Mourat, Stephen, AB, West Virginia University, 1941; MD, Jefferson Medical College, 1944.\*
- Nolan, Jay H., BA, Sacramento State College, 1961; MA, Stanford University, 1962; PhD, 1972.
- Nosphitz, Joseph D., BA, University of Louisville, 1943; MD, 1945.
- Nyman, Gary, AB, Columbia College, 1963; MD, University of Virginia, 1968.\*
- Oleynick, Harry A., BA, University of Pennsylvania, 1952; MD, University of Chicago School of Medicine, 1956.\*
- Olsen, Roger L., BA, St. Olaf College, 1962; MA, University of South Dakota, 1963; PhD, Southern Illinois University, 1968.\*
- Olsson, James E., BS, University of Maryland, 1959; MA, Catholic University of America, 1962; PhD, 1967.\*
- Ozir, Mark M., AB, Harvard University, 1953; MD, Boston University School of Medicine, 1957.\*
- Paskewitz, David A., BA, University of Minnesota, 1963; MS, University of Oklahoma, 1965; PhD, 1967.
- Powell, Albert M., Jr., MD, University of Maryland, 1948.\*
- Press, Leonard, BA, Johns Hopkins University, 1952; MSSA, Western Reserve University, 1957.\*
- Rhead, John C., BA, Dartmouth College, 1967; PhD, Stanford University, 1971.\*
- Robinson, Kent, BA, University of Cincinnati, 1943; MD, 1947.\*
- Robinson, Lisa, BSN Ed, American University, 1961; MS, University of Maryland, 1965; RN, 1969; PhD, Union Memorial Hospital, 1970.\*
- Rodbell, Stanley L., BS, University of Pennsylvania, 1955; JD, Yale University, 1958; MLA, Johns Hopkins University, 1971; MSW, University of Maryland, 1975.
- Romero, Eduardo, MD, Universidad Nacional, Cordoba, Argentina, 1962.\*
- Satterfield, Sharon B., BS, University of Michigan, 1966; MD, 1970.
- Schonfield, Jacob, BA, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.\*
- Schreder, Richard H., psychiatric social work; BA, University of Notre Dame, 1966; MSW, University of Maryland, 1972.
- Schwartz, Lloyd, clinical psychology; BA, Pennsylvania State University, 1947; MS, 1946; PhD, American University, 1967.\*
- Schweig, Noel, BA, Wesleyan University, 1951; MD, Duke University, 1956.\*
- Shapiro, Solomon, clinical psychology; BS, Towson State College, 1942; MA, Johns Hopkins University, 1948; PhD, University of Maryland, 1952.\*
- Shear, Howard J., psychology; BA, University of Maryland, 1950; MA, University of Texas, 1953; PhD, 1955.\*
- Sila, Basra, BS, College of St. Michael, Istanbul, Turkey, 1950; MD, University of Istanbul, 1956.\*
- Sojit, Cloe M., psychology; Licenciada in Psychology, University of Buenos Aires, 1965.\*
- Tormey, Judith, BA, Barnard College, 1961; PhD, Columbia University, 1970.\*
- Turek, Ibrahim, MD, University of Istanbul, 1954.\*
- Ulgar, Ulku, MD, University of Istanbul, 1959.\*
- Von Muehlen, Lutz, BS, University of Frankfurt, 1954; MD, University of Munich, 1958.\*
- Wain, Harold J., BS, Brooklyn College, 1964; MA, Columbia University, 1966; PhD, Nebraska University, 1970.\*
- Wallis, Kathryn D., BS, University of Southwestern Louisiana, 1967; MS, University of Maryland, 1976.\*
- Weinstein, Stanley, psychiatric social work; BA, University of Maryland, 1965; MSW, 1968.
- Weisman, Maxwell N., BA, City College of New York, 1930; MA, Columbia University, 1931; MD, University of Amsterdam, 1958.\*
- Woolsey, Susan F., BSN, Washington University, 1948; MS, University of Maryland, 1968; PNP, University of Maryland, 1976.

#### *Instructor*

- Abbas, Mahmoud F., MD, Ein Shams University, Cairo, Egypt, 1955.\*
- Anderson, Richard H., BS, University of Delaware, 1961; MD, Temple University, 1966.\*
- Arbogast, Richard C., BA, Thomas More College, 1961; MD, Johns Hopkins University, 1965.\*
- Arnold, William H., MD, University of Rochester, 1957.\*
- Becker, Rheda E., BA, University of Maryland, 1956; MA, 1957.\*
- Bergmann, Barbara A., BS, American University, 1967; MD, University of California at San Francisco, 1971.\*
- Berman, Merrill I., AB, Johns Hopkins University, 1958; MD, University of Maryland, 1962.\*

- Bisco, Michael J., AB, Yale University, 1951; MD, Western Reserve University, 1955.\*
- Burka, Aden A., BA, Wesleyan University, 1970; PhD, University of Rochester, 1976.\*
- Carver, Patricia N., AB, Wellesley College, 1955; MA, Clark University, 1958; PhD, 1961.\*
- Cephas, Barbara, BA, Coppin State College, 1968; MSW, University of Maryland, 1970.
- Christopher, Russell Lee, Jr., BS, University of Southern California, 1966; MD, University of Maryland, 1972.\*
- Connor, Huell E., Jr., BS, Texas A&M University, 1958; MA, University of Texas, 1960; MD, 1964.\*
- Croce, Giovanni C., MD, University of Rome, 1946.\*
- Decker, Curtis L., BA, Hamilton College, 1966; JD, Cornell Law School, 1969.\*
- Dvoskin, Philip, BS, University of Maryland, 1962; MD, 1966.\*
- El-Beshir, Abdel M., MB, ChB, Kasr-El-Aing School of Medicine, 1954.\*
- Fetterhoff, L. Ira., BA, Carroll College, 1951; M Div, Philadelphia Divinity School, 1954; MD, University of Maryland, 1967.\*
- Finn, Rolfe B., MB, ChB, University of Otago, N.Z., 1950; DPM, Conjoint Examining Board of England, 1957.\*
- Fitch, Frances J., BS, Morgan State College, 1973; MS, Loyola College, 1975.
- Flaherty, Lois, BA, Wellesley College, 1963; MD, Duke University, 1968.\*
- Flashman, Alberta, BA, UCLA, 1955; MD, University of Southern California, 1960.\*
- Freinek, Wilfried R., MD, Innsbruck University, University of Austria, 1953.\*
- Genut, Kate L., psychiatric social work; BA, University of Maryland, 1968; MSW, 1970.\*
- Goodbody, Sandra, BS, University of Pennsylvania, 1970; MS, 1971; MSW, Smith College, 1975.
- Hamilton, John, BA, Pacific Union College, 1943; MD, Howard University, 1951.\*
- Johnson, Frank P., BS in Ed., Ballstate University, 1957; MDiv., Andover Newton Theological School, 1961.\*
- Jolbitado, Deusededita, AA, University of Santo Tomas, 1951; MD, 1956.\*
- Kniffin, Lynn, AB, University of Akron, 1952; MSW, University of Maryland, 1968.
- Levin, Leon A., BS, University of Wisconsin, 1952; MD, 1956.\*
- Levy, Stephen, psychology; BA, Johns Hopkins University, 1966; MA (equivalency), 1967.\*
- Lisansky, Sylvia, AB, Goucher College, 1936; MSW, University of Maryland, 1970.\*
- Love, Lois, BA, Swarthmore College, 1943; PhD, University of Pennsylvania, 1947; MD, University of Maryland, 1962.\*
- Maters, Patricia, psychiatric nursing; SRN, St. Bartholomew's Hospital, London, 1952.
- Maziar, Howard M., BS, Tulane University, 1968; MD, Medical College of Georgia, 1972.\*
- O'Donnell, James J., Alcoholism counseling project.
- Oppenheimer, Ruth, child therapy; BA, University of London, 1953.\*
- Pomerantz, Gail, BSN, University of Maryland, 1967.\*
- Roberts, Randy, clinical psychology; BA, University of Pennsylvania, 1967; MA, University of Maryland, 1970; PhD, 1971.\*
- Roop, Ann B., BS, University of Maryland, 1958; MSW, 1974.
- Rudnick, Barry F., BS, Union College, 1968; MD, Albany Medical College, 1972.\*
- Saunders, Stephen W., BA, Emory University, 1967; MD, 1973.\*
- Schulz, Clarence G., MD, Washington University, 1945.\*
- Seman, Patti, BA, Loyola College, 1972; MSW, University of Maryland, 1974.
- Smith, Boylston, AB, West Virginia University, 1946; MD, University of Maryland, 1952.\*
- Smith, James, II, AB, Union College, 1944; MD, University of Pennsylvania, 1951.\*
- Steinbach, Irvin L., clinical psychology; BS, University of Maryland, 1953; MA, George Washington University, 1966.\*
- Taylor, Ronald J., AB, Washington and Jefferson College, 1966; MS, Yeshiva University, 1968; MD, University of Maryland, 1973.\*
- Terry, Jane, BA, College of William & Mary, 1967; MD, University of Kansas, 1971.
- Thorton, Doris S., BA, Meredith College, 1957; MD, University of Maryland, 1974.
- Trattner, Robert E., DDS, Western Reserve University, 1945; AB, 1947; MD, University of Chicago, 1951.\*
- Vauls, Kersley, BS, Morgan State College, 1958.
- Warwick, Arthur M., BA, Western Reserve University, 1966; MD, University of Maryland, 1970.\*
- Weinstein, Gerald E., BA, Syracuse University, 1949; MD, 1954.\*
- Weinstock, Joseph S., BA, University of Maryland, 1956; MD, 1965.\*
- Wise, Samuel P., III, MA, Emory University, 1941; MD, Tulane University, 1946.\*

*Associate*

- Einberg, Elmar, EE, Netzlers Institute of Technology, Gothenburg, Sweden, 1950; BS, Johns Hopkins University, 1962.  
 Harris, William M., AB, University of West Virginia, 1941; MD, University of Maryland, 1953.\*  
 McCullough, Duncan, AB, Princeton University, 1950.  
 Sidhu, Ajaib D., BS, Punjab University, India, 1943; MBBS, 1950; MD, University of Delhi, 1962.

**RADIOLOGY***Professor*

- Angell, Franklin L., BS, Virginia Polytechnic Institute, 1941; MD, Medical College of Virginia, 1947.\*  
 Ayella, Robert J., MD, University of Pennsylvania, 1949; MSc (medicine), 1953.  
 Dennis, John M., dean, School of Medicine; BS, University of Maryland, 1943; MD, 1945.\*  
 Diaconis, John N., acting chairman; BS, University of Maryland, 1955; MD, 1961.  
 Robinson, James, E., BS, Utah State Agricultural College, 1947; MA, Washington University, 1949; PhD, 1955.  
 Siegelman, Stanley S., AB, Cornell University, 1953; MD, State University of New York College of Medicine, 1957.\*

*Associate Professor*

- Bell, James E., BS, Virginia Union University, 1951; MD, Howard University, 1957.\*  
 Brace, Kirkland C., BA, State University of Iowa, 1942; MD, University of Illinois College of Medicine, 1945.\*  
 Knox, Gaylord, MD, Tuland University, 1951.\*  
 Prempre, Thonbliew, MD, Siriraj Medical School, Thailand, 1958; PhD, Johns Hopkins University, 1968.  
 Slawson, Robert G., BS, Morningside College, 1958; MD, State University of Iowa College of Medicine, 1962.

*Assistant Professor*

- Brennan, Thomas G., BS, St. Mary's College, 1967; MD, University of Maryland, 1971.  
 Byhardt, Roger W., BS, Marquette School of Medicine of Wisconsin, 1964; MD, 1968.\*  
 Cheung, Augustine Yin-Pan, BS, University of Maryland College Park, 1969; MS, 1971; PhD, 1973.  
 Cox, Colin R., BA, Oxford University, England, 1963; PhD, 1968.  
 Crawford, George A., BS, Loyola College, 1965; MD, University of Maryland, 1969.  
 Dinker, Robert E., BS, University of Maryland, 1958; MD, 1963.\*  
 Edelsack, Edgar, MS, University of Southern California, 1949.\*  
 Goldman, Stanford M., BA, Yeshiva University of New York, 1961; MD, Albert Einstein College of Medicine, New York, 1965.\*  
 Green, John S., III, AB, Princeton University, 1942; MD, Johns Hopkins University, 1954.\*  
 Harrison, George, BA, Tufts University, 1965; MS, University of Maryland, 1969; PhD, 1972.  
 Hill, Michael C., MB, University College of Dublin, Ireland, 1970.  
 Hyman, Nathan B., BS, University of Maryland, 1942; MD, 1946.\*  
 Isikoff, Michael B., BA, Washington University of St. Louis, 1968; MD, University of Maryland, 1972.  
 Kim, III-Soo, Pre-Medical Course, College of Science and Engineering, Yonsel University, Seoul, Korea, 1963; MD, 1967.  
 Kim, Ryun, MD, Kyung-Buk National University School of Medicine in Taegu Dorea, 1954.\*  
 Kumpe, David A., AB, Oberlin College, 1963; MD, Harvard University, 1967.  
 Lewis, Henry S., AB, Princeton University, 1955; MD, University of Virginia Medical School, 1959.\*  
 Martins, Bambino, BS, University of Bombay, 1960; MS, 1962; PhD, University of California, Berkeley, 1971.  
 Nilprabhassorn, Prasarn, BS, University of Medical Sciences, Bangkok, 1956; MD, 1960.\*  
 Thomas, William N., MD, University of Virginia, 1942.\*  
 Rao, Krishna, C.V.G., DMS, Kilpauk Medical College of Madras University, India, 1960; MD, 1967.



- Samaras, George M., BSEE, University of Maryland College Park, 1972; MS, 1974; PhD, 1976.  
 Viravathana, Thavinsakd, BS, Chulalongkorn University, Bangkok, 1960; MD, Siriraj Hospital, Mahidol University, Bangkok, 1964.  
 Wallop, William H., AA, Princeton University, 1949; MD, Columbia University College of Physicians and Surgeons, 1949.\*  
 Warner, Sandra L., BS, Towson State College, 1971.  
 Weiner, Charles I., BA, Gettysburg College, 1966; MD, University of Maryland, 1971.\*  
 White, Dennis W., BS, Ohio University, 1958; MD, Johns Hopkins University, 1962.  
 Wipfelder, Rosemarie, BS, Massachusetts Institute of Technology, 1965; MS, Harvard University, 1970.\*

#### *Instructor*

- Andelman, Samuel M., BS, Ohio State University, 1960; MD, Chicago Medical School, 1964.\*  
 Arnold, Charles J.E., AB, Ohio Wesleyan University, 1963; MD, University of Cincinnati College of Medicine, 1969.\*  
 Bearman, Sheldon B., BA, University of Pennsylvania, 1964; MD, University of Maryland, 1968.\*  
 Campbell, H. James, BS, University of Maryland, 1959; MD, 1963.\*  
 Harty, Mary L., MD, Royal College of Surgeons in Ireland, 1972.  
 McNeely, Warren D., AS, Allegheny College, Pennsylvania, 1965; MD, University of Maryland, 1969.\*  
 Saylor, Lyle T., BS, Ursinus College, Collegeville, Pennsylvania, 1966; MD, Hahnemann Medical College, Philadelphia, Pennsylvania, 1970.  
 Sherman, Michael, AB, Duke University, 1963; MD, University of Maryland, 1967.\*  
 Silverton, George, BA, Yale University, 1928; MD, University of Maryland, 1932.\*  
 Snyder, Larry A., BS, University of Maryland School of Pharmacy, 1960; MD, 1965.\*  
 Stofberg, Nathan, BS, University of Maryland, 1956; MD, 1960.\*  
 Warfield, John R., BS, University of Maryland, 1968; MD, University of Maryland, 1972.  
 Zile, Zoland Z., III, BS, Rt, Alderson-Broadbent College, 1970; MS, Hunter College, New York, 1975.

#### *Associate*

- Arrieta, Beatriz A., BA, St. Theresa's College, Manila, Philippines, 1963.  
 Kubiczek, Elizabeth, MSc, University of Warsaw, 1967; MSc, University of Maryland, 1973.\*  
 McCullough, Duncan, AB, Princeton University, 1950; BSEE, Johns Hopkins, 1973.\*  
 Mendenhall, Lisa J., BS, Rt, University of Maryland, 1976.

## REHABILITATION MEDICINE

#### *Professor*

- Richardson, Paul F., chairman; MD, University of Maryland, 1950.  
 Cohen, B. Stanley, MD, University of Maryland, 1947.\*

#### *Associate Professor*

- Fleischer, Clara J., MS (pharmacy), University of Prague, 1932; MD, Medical College of Virginia, 1942.\*  
 Gessner, John E., BS, Loyola College, 1950; MD, University of Maryland, 1954.  
 Goldfine, Lewis J., MBBS (MD), Kings College and Hospital, University of London, 1960; DPhys Med, 1967.  
 Lentz, George A., Jr., AB, Johns Hopkins University, 1953; MD, University of Maryland, 1957.\*  
 Raab, Kurt, MD, Medical School of the University of Vienna, 1955.\*  
 Schonfield, Jacob, BS, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.

#### *Assistant Professor*

- Balsam, Frederick J., BS, College of the City of New York, 1931; MD, University of Lausanne, Switzerland, 1938.\*  
 Duke, C. James, MD, Marquette University, 1955.\*  
 Feliciano, Christine B., BS, University of Philippines, 1961; MD, 1964.  
 Felsenthal, Gerald, BA, New York University, 1963; MD, Albany Medical College, 1967.\*

- Huang, Tai-San, MD, Kaohsiung Medical College, Taiwan, 1961; MS, Graduate School of Washington, 1972.\*
- Reinstein, Leon, BS, University of Maryland, 1964; MD, 1969.
- Rosen, Norman B., BA, Johns Hopkins University, 1959; MD, University of Maryland, 1963.\*
- Spindler, Henry, AB, Lehigh University, 1964; MD, New York University, 1968.\*
- Urusky, Walter, AB, New York University, 1938; MD, Marquette University, 1942.\*

#### *Instructor*

- Cho, Aye Aye, MBBS (MD), Institute of Medicine, Rangoon, Burma, 1967.
- Dankmeyer, Charles, Jr., BS, New York University, 1967.
- Grant, Albert, BS, University of Maryland, 1940; MD, 1943.\*
- Hendry, Marjorie, BS, University of Minnesota, 1941; MD, Medical College of Pennsylvania, 1953.\*
- Shannon, Dorothy, BA, Montclair State College, 1965; MS, Pennsylvania State University, 1966; PhD, University of Maryland, 1973.
- Weiss, Thomas, psychology; BA, Rutgers University, 1966; MS, North Carolina State, 1969; PhD, 1971.

## **SOCIAL AND PREVENTIVE MEDICINE**

#### *Professor*

- Canner, Paul L., BA, University of Minnesota, 1960; MS, 1962; PhD, 1966.
- Entwisle, George, BS, University of Massachusetts, 1945; MD, Boston University, 1946.
- Ferencz, Charlotte, BS, McGill University, 1944; MD, 1945; MPH, Johns Hopkins University, 1970.
- Klimt, Christian P., MD, University of Vienna, 1944; MPH, Johns Hopkins University, 1952; DrPH, 1959.
- Knatterud, Genell L., BA, Macalester College, 1952; MS, University of Minnesota, 1959; PhD, 1963.
- Meinert, Curtis, acting chairman; BS, University of Minnesota, 1956; MS, 1959; PhD, 1964.
- Smith, Richard T., BA, University of Kansas City, 1955; MA, 1956; PhD, University of Wisconsin, 1960.\*
- Sorkin, Alan L., BA, Johns Hopkins University, 1963; MA, 1964; PhD, 1966.\*
- Spicer, William S., director, primary care program; MD, University of Kansas, 1949.
- Tayback, Matthew, AB, Harvard University, 1939; MA, Columbia University, 1940; ScD, Johns Hopkins University, 1953.\*

#### *Associate Professor*

- Apostolides, Aristide Y., DVM, National Veterinary School of Toulouse, France, 1963; PhD, University of North Carolina, 1970.
- Barrett, Harle V., BS, Oklahoma A&M College, 1940; MS, Kansas State College, 1942; MD, University of Kansas, 1946; MPH, Harvard University, 1950.
- Berman, Joseph, BA, Clark University, 1957; MD, Tufts University, 1961; MPH, Johns Hopkins University, 1968.\*
- Chan, Yick-Kwong, BS, Taiwan Provincial College of Agriculture, 1955; MS, University of Minnesota, 1960; PhD, 1966.\*
- Go, Howard T., D. Eng., University of Technology, Delft, The Netherlands, 1958.\*
- Hebel, John R., BS, Virginia Polytechnic Institute, 1962; PhD, 1965.
- Kessler, Irving J., AB, New York University, 1952; MA, Harvard University, 1955; MD, Stanford University, 1960; MPH, Columbia University, 1952; DrPH, Harvard University, 1968.\*
- Krol, William F., BS, University of Chicago, 1958; MS, 1964; PhD, Johns Hopkins University, 1968.
- McDill, Mary S., BS, University of Alabama, 1956; PhD, Johns Hopkins University, 1970.
- Matanoski, Genevieve M., BA, Radcliffe College, 1950; MD, Johns Hopkins University, 1955; MPH, 1962; DrPH, 1964.\*
- Morton, Richard F., BSC, University of London, 1943; MBBS, University of London, Middlesex Hospital, 1953; MPH, UCLA, 1970.
- Sherwin, Roger W., BA, Cambridge University, 1953; MA, 1958; MB, BChir, 1958.
- Stolley, Paul D., BA, Lafayette College, 1957; MD, Cornell University, 1962; MPH, Johns Hopkins University, 1968.\*
- Warbasse, James R., BA, Princeton University, 1948; MD, Harvard Medical School, 1954.\*

White, Benjamin D., BA, Furman University, 1941; MD, Medical College of Georgia, 1946; MPH, Johns Hopkins University, 1959.\*

#### *Assistant Professor*

Bridwell, Margaret W., BS, Tulane University, 1943; MD, L.S.U. Medical Center, 1946.\*

Carozza, Nijole, BS, University of Maryland, 1959; MD, 1963.\*

Cash, Richard A., BS, University of Wisconsin, 1962; MD, New York University, 1966.\*

Dischinger, Patricia, BA, Wilson College, 1966; MSPH, University of North Carolina, 1971; PhD, 1974.

Doub, Nancy H., AB, University of North Carolina, 1969; MEd, University of Virginia, 1971; PhD, 1973.

East, Paul, LIB, Gray's Inn, London, 1966; LMSSA, University College Hospital, London, 1967; MBBS and LRC PMRCS (conjoint), 1968; LLM, George Washington University, 1970; MPH, Johns Hopkins University, 1973.\*

Fischman, Susan H., BSN, University of Michigan, 1957; MPH, Johns Hopkins University, 1965; DrPH, 1974; Cert. in Nurse-Midwifery, New York Medical College, 1966.\*

Flynn, James, BA, Dublin University, 1960; MD, 1962; MA, 1964; MPH, Johns Hopkins University, 1970.\*

Hillis, Argye B., BS, Towson State College, 1968; PhD, Johns Hopkins School of Hygiene and Public Health, 1974.

Huang, Yih-Min B., BS, Taiwan University, 1967; MS, Illinois State University, 1970; PhD, University of Iowa, 1974.

Hulbert, Linda L., BS, St. Lawrence University, 1968; PhD, Purdue University, 1972.

Jessee, William F., BA, Stanford University, 1968; MD, University of California, San Diego, 1972.\*

Kassel, Leon, MD, University of Virginia, 1949.\*

Kennedy, Harold L., BS, University of Denver, 1959; MD, University of Missouri, 1964.\*

Kohler, Helen R., BS, University of Pennsylvania, 1960; MS, University of Minnesota, 1962; PhD, University of North Carolina, 1974.\*

Krompholz, Brigita M., MD, Charles University of Prague, 1957; MPH, Johns Hopkins University, 1975.

Lamm, Steven H., BS, University of California, Los Angeles, 1963; MS, University of Southern California, 1964; MD, University of Southern California, 1968; DTPH, London School of Hygiene and Tropical Medicine, 1974.\*

Levine, Myron M., BS, City College of New York, 1963; MD, Medical College of Virginia, 1967; DTPH, London School of Hygiene and Tropical Medicine, 1974.\*

List, Noel D., BA, New York University, 1960; MD, State University of New York, Downstate, 1965; MPH, Harvard University, 1967.

Massey, Ronald M., BA, Tulane University, 1968; MD, Vanderbilt University, 1972; MPH, Johns Hopkins University, 1974.\*

Miller, Louis W., BS, University of Maryland, 1963; MD, 1967; MPH, Johns Hopkins University, 1969.\*

Ostroff, Morris, BA, University of Massachusetts, 1964; MD, University of Vermont, 1968; MPH, Johns Hopkins University, 1973.\*

Pitts, John L., MD, Medical College of Virginia, 1948; MPH, Johns Hopkins University, 1959.\*

Smith, Keith, BS, University of Michigan, 1943; MS, Marshall University, 1969; PhD, Johns Hopkins University, 1972.

Wasserman, Martin P., BA, Williams College, 1964; MD, Johns Hopkins University, 1968.\*

Wilson, Phillip D., BA, University of Colorado, 1956; MS, University of Minnesota, 1963; PhD, Johns Hopkins University, 1970.

Zimmerly, James G., BA, Gannon College, 1962; MD, University of Maryland, 1966; MPH, Johns Hopkins University, 1968; JD, University of Maryland, 1969.\*

#### *Instructor*

Barker, William, BA, Princeton University, 1962; MD, Johns Hopkins University, 1966.\*

Booth, Rachael A., BSN, University of Maryland, 1968; MS, 1970.\*

Gendason, Howard, AB, Western Maryland College, 1957; MD, University of Maryland, 1962.\*

Guberski, Thomasine, BA, American International College, 1964; MS, University of Michigan, 1969.\*

Moran, Marguerite, BS, St. John's University, 1965; MD, New York Medical College, 1969.\*



Vogel, F. Philip, BA, Catholic University, 1965.\*

Wiser, Thomas H., BS, University of Minnesota, 1971; Pharm. D, 1973.\*

#### *Associate*

De Hoff, John B., AB, Johns Hopkins University, 1935; MD, 1939; MPH, 1967.\*

Forman, Sandra A., BS, The City College of New York, 1968; MA, Columbia University, 1969.

Hawkins, Barbara L., BS, North Carolina State University, 1962; MS, Johns Hopkins University, 1969.

Keiser, Mary, BA, Goucher College, 1940.\*

Lamy, Peter P., BSc (pharmacy), Philadelphia College of Pharmacy and Science, 1956; MSc, 1958; PhD, 1964.\*

### **SURGERY**

#### *Professor*

Mason, G. Robert, chairman; BA, Oberlin College, 1955; MD, University of Chicago, 1957; PhD (physiology), Stanford University, 1968.

Arnold, James G., BA, University of North Carolina, 1925; MD, Johns Hopkins University, 1929.\*

Attar, Safuh, BA, American University of Beirut, Lebanon, 1947; MD, 1951.

Blanchard, Cyrus L., BA, Clark University, 1943; MD, George Washington University, 1946.

Cowley, R. Adams, MD, University of Maryland, 1944.\*

Crosby, Robert M. N., MD, University of Maryland, 1943.\*

Dagher, Fuad J., BA, American University of Beirut, Lebanon, 1954; MD, 1958.\*

Ducker, Thomas B., BA, University of Virginia, 1959; MD, University of Virginia, 1963.

Hubbard, Thomas B., Jr., BA, Princeton University, 1938; MD, Columbia University, 1942; PhD (surgery), University of Minnesota, 1952.\*

Hull, Harry C., MD, University of Maryland, 1932.

McLaughlin, Joseph S., Loyola College, 1954; MD, University of Maryland, 1956.

Morgan, Thomas, MB, Cambridge University, 1943; MD, University College Hospital Medical School, London, 1945.\*

Mosberg, William H., Jr., BS, University of Maryland, 1943; MD, 1944.\*

Smith, Gardner W., MD, Harvard Medical School, 1956; AB, Princeton University, 1969.\*

Thompson, Raymond K., BS, University of Maryland, 1937; MD, 1941.\*

Young, John D., Jr., BA, Bridgewater College, 1938; MD, University of Maryland, 1941.

#### *Associate Professor*

Abrams, Robert C., AB, Johns Hopkins University, 1935; MD, 1939.\*

Adams, Thurston R., MD, University of Maryland, 1934.\*

Campbell, Edward W., Jr., AB, Amherst College, 1954; MD, Hahnemann Medical College, 1958.\*

Cranley, Robert E., BS, University of Maryland, 1956; MD, University of Maryland, 1958.\*

Currie, Richard A., BS, McGill University, 1946; MDCM, 1948.\*

Diamond, Liebe S., AB, Smith College, 1951; MD, University of Pennsylvania, 1955.\*

Dorfman, Howard D., BA, New York University, 1947; MD, SUNY, Downstate, 1951.\*

Elias, E. George, MD, University of Cairo, 1957; MS, State University of New York, 1974; PhD, University of Buffalo, 1975.

Fletcher, Margaret M., MD, University of Michigan, 1961.\*

Hankins, John R., BA, University of Virginia, 1945; MD, University of Maryland, 1948.

Kieffer, Richard F., Jr., BS, Franklin and Marshall College, 1941; MD, Johns Hopkins University, 1944.\*

LaBrosse, Elwood, BS, Northwestern University, 1945; MS, 1948; MD, 1949; PhD, University of Texas, 1956.

Michael, Roger H., BA, Oberlin College, 1953; MD, Western Reserve University, 1957.\*

Miller, John F., BA, Pennsylvania State University, 1938; MD, Jefferson Medical College, 1942.\*

Schmeisser, Gerhard, Jr., AB, Princeton University, 1949; MD, Johns Hopkins University, 1953.\*

Shermeta, Dennis W., MS, University of Michigan, 1961; MD, 1965.\*

Tansey, John J., AB, Brown University, 1942; MD, University of Maryland, 1945.\*

Turney, Stephen Z., BS, John Carroll University, 1955; MD, Georgetown University, 1959.

Walker, Michael D., BS, Yale University, 1956; MD, Boston University, 1960.\*

*Assistant Professor*

- Amoss, Willard, BA, Western Maryland College, 1964; MD, University of Maryland, 1968.\*
- Austin, Ernest, BS, St. John's University, 1953; MD, Howard University, 1957.
- Baker, Dole P., BA, Harvard University, 1961; MD, Jefferson Medical College, 1965.\*
- Bashirelahi, Nasir, BS, Tehran University, 1960; Pharm.D., Tehran University, 1962.\*
- Becker, Larry, BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.\*
- Bowie, Harry C., BS, University of Maryland, 1933; MD, University of Maryland, 1936.\*
- Breschi, Louis C., BS, Loyola College, 1958; MD, University of Maryland, 1962.\*
- Bruce, William G., BA, Transylvania College, 1960; MD, University of Maryland, 1965.
- Chambers, Robert G., BS, Duke University, 1944; MD, 1945.\*
- Cherry, Jerrie, BA, University of Virginia, 1951; MD, Johns Hopkins University, 1955.\*
- Cicci, Regina L., BS, Kent State University, 1960; MA, Northwestern University, 1961.
- Clark, Francis A., Jr., MD, University of Maryland, 1961.\*
- Cranley, Robert E., BS, University of Maryland, 1956; MD, 1958.\*
- Decker, J. Scott, BS, University of Illinois, 1957; MD, 1961.\*
- Diamond, Liebe S., BA, Smith College, 1951; MD, University of Pennsylvania, 1955.\*
- Doyle, Robert L., BS, Loyola College, 1959; MD, University of Maryland, 1964.\*
- Edwards, Charles C., BA, Duke University, 1964; MD, University of Maryland, 1968.
- Eisenstat, Theodore E., BA, Vanderbilt University, 1964; MD, New York Medical College, 1968.
- Ferris, Philip J., BA, Johns Hopkins University, 1954; MD, 1958.\*
- Gelber, Rene L., BA, Pomona College, 1959; MD, University of California, 1963.\*
- Greenstein, George H., BA, Johns Hopkins University, 1941; MD, 1950.\*
- Gudwin, Arthur L., BS, Tufts University, 1959; MD, 1963.\*
- Herrmann, Raymond W., BA, University of Illinois, 1941; MD, 1950.\*
- House, Homer C., BS, Washington and Lee University, 1959; MD, George Washington University, 1964.\*
- Imbembo, Anthony, AB, Columbia University, 1963; MD, 1967.\*
- Karmi, Said A., BS, American University of Beirut, 1960; MD, 1964.
- Lynn, William D., BA, Princeton University, 1940; MD, Johns Hopkins University, 1943.\*
- Mays, Howard B., MD, University of Maryland, 1935.\*
- Mech, Karl, Sr., BS, University of Maryland, 1932; MD, 1935.\*
- Minken, Stanley L., BS, University of Maryland, 1958; MS, George Washington University, 1959; MD, University of Maryland, 1963.\*
- Novin, Neil, BA, New York University, 1951; MD, State University of New York, 1955.\*
- Ormsbee, Herbert, III, BA, Lawrence University, 1970; MS, University of Wisconsin, 1972; PhD, 1974.
- Orlando, Joseph, BS, Loyola College, 1962; MD, University of Maryland, 1967.\*
- Pierpont, Ross Z., BS, University of Maryland, 1939; MD, 1940.\*
- Powder, James R., BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.\*
- Reichmister, Jerome P., BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.\*
- Rever, William B., Jr., MD, University of Maryland, 1950.\*
- Russo, G. Lee, AB, Loyola College, 1955; MD, University of Maryland, 1959.\*
- Salcman, Michael, BA, MD, Boston University, 1969.
- Satterfield, John R., Jr., BS, University of South Carolina, 1960; MD, Medical College of South Carolina, 1964.
- Schneider, Richard J., BA, University of Chicago, 1966; PhD (neuropharmacology), University of Pittsburgh, 1972.
- Sharrett, John O., MD, University of Maryland, 1952.\*
- Singer, John A., BA, Cornell University, 1963; MD, SUNY, Downstate Medical Center, 1967.\*
- Sothoron, Warren H., BS, Juniata College, 1958; MD, University of Maryland, 1962.\*
- Sterioff, Sylvester, BA, Harvard University, 1959; MD, Washington University, 1963.\*
- Su, Chi-Tsung, MD, National Taiwan University, 1961.\*
- Suter, Charles M., BSEE, Drexel Institute, 1964; PhD (physiology), University of Maryland, 1969.
- Tarr, Norman, BS, Washington College, 1948; MD, University of Maryland, 1948.\*
- Weiner, Israel H., BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.\*
- Wenzlaff, Edward F., BA, Columbia College, 1948; MD, University of Buffalo, 1954.\*
- Wilhelmsen, Hans R., DDS, University of Maryland, 1955; MD, 1959.\*

*Instructor*

- Barrick, Donald M., BA, George Washington University, 1958; MD, University of Maryland, 1962.\*
- Belcher, H. Vaughan, BA, University of Virginia, 1948; MD, Medical College of Virginia, 1952.\*
- Bergmann, Frederick G., AB, Cornell University, 1963; MD, Temple University, 1967.\*
- Bialostozky, Franklin M., BS, Brooklyn College, 1972; MA, Northwestern University, 1976.
- Blum, Stanley L., BA, Lafayette College, 1961; MD, University of Maryland, 1965.\*
- Blumberg, Joan L., BS, Towson State College, 1970; MS, Pennsylvania State University, 1971.
- Blumberg, Lawrence, BA, Western Maryland College, 1967; MD, University of Maryland, 1971.\*
- Brouillet, George H., Jr., BS, University of Maryland, 1967; MD, 1971.\*
- Busky, Stephen M., AB, Hamilton College, 1964; MD, New York University, 1968.\*
- Clayton, Marco, BS, Union College, 1954; MD, PhD (hematology), Johannes Gutenberg, Germany, 1964.\*
- Cohen, Edward R., BS, University of Maryland, 1963; MD, 1967.\*
- Cole, Fred N., BA, University of Virginia, 1952; MD, 1956.\*
- Cook, David M., BS, Ohio University, 1962; MD, University of Maryland, 1966.\*
- Courtney, Leo A., III, BS, University of Maryland, 1966; MD, 1970.\*
- Cunningham, Raymond M., BA, Loyola College, 1935; MD, University of Maryland, 1939.\*
- Demarco, Salvatore J., AB, Loyola College, 1955; MD, University of Maryland, 1959.\*
- Ellis, Michael, BS, Loyola College, 1961; MD, University of Maryland, 1966.\*
- Engnoth, Milton L., BS, University of Maryland, 1953; MD, 1957.\*
- Fox, Madeline, BA, Queens College, 1966; MS, University of Michigan, 1967.
- Friedler, Stanley, BS, University of Maryland, 1961; MD, 1965.\*
- Gillis, David J., BS, Loyola College, 1960; MD, University of Maryland, 1965.\*
- Goldstein, Robert B., MD, University of Maryland, 1954.\*
- Hammond, Anthony F., BS, Seton Hall University, 1953; MD, University of Maryland, 1957.\*
- Henderson, Charles M., BS, University of Maryland, 1955; MD, 1957.\*
- Hennessy, Robert G., BS, Holy Cross College, 1956; MD, Georgetown University, 1960.\*
- Hicks, Evelyn C., BA, University of Maryland, 1958; MA, 1966.\*
- Himelfarb, Terren M., BS, University of Maryland, 1961; MD, 1965.\*
- Jasion, Arthur, BS, University of Maryland, 1957; MD, 1959.\*
- Keats, Neil M., BS, University of Michigan, 1965; MD, 1969.\*
- King, August D., Jr., BS, University of Maryland, 1957; MD, 1959.\*
- Lancelotta, Charles J., BA, Loyola College, 1964; MD, University of Maryland, 1968.\*
- Layne, Edward L., BS, Ohio State University, 1961; MD, 1965.\*
- Leveque, Hubert, MD, University of Lausanne, 1969.
- McHold, Davis S., BS, Moorehead University, 1962; MD, University of Maryland, 1967.\*
- Mech, Karl, Jr., BA, Wesleyan University, 1964; MD, University of Maryland, 1968.\*
- Meyer, Paul D., BS, University of Maryland, 1955; MS, George Washington University, 1956; MD, University of Maryland, 1960.\*
- Ominsky, Barry E. L., BS, University of Maryland, 1962; MD, 1966.\*
- Ordenez, Jorge R., MD, San Carlos University, 1963.\*
- Pardo, Juan M., BS, Loyola College, 1965; MD, University of Maryland, 1970.\*
- Pidcock, Paulette C., BS, California State College, Pennsylvania, 1967; MA, University of Maryland, 1971.
- Plasse, Jerome, AB, Columbia College, 1955; MD, New York University, 1959.\*
- Ramsey, Harold E., BS, Knoxville College, 1950; MD, Meharry Medical College, 1956.\*
- Raneri, Anthony J., BS, Villanova University, 1967; MD, Georgetown University, 1971.\*
- Renbaum, Joel W., BA, Johns Hopkins University, 1967; MD, University of Maryland, 1968.\*
- Ritchie, George F., BS, Manhattan College, 1962; MD, Creighton University, 1966.\*
- Robinson, Walker L., BS, Morgan State College, 1962; MD, University of Maryland, 1970.
- Rosell, Luis A., MD, University of Seville, Spain, 1962.\*
- Sapre, Arun B., MB, BS, Medical College, Nagpur University, India, 1960.\*
- Schaefer, Walter C., BS, University of Maryland, 1964; MD, 1968.
- Shin, Young C., MD, Seoul National University, 1959.\*
- Shpritz, Louis A., BS, University of Maryland, 1966; MD, 1970.\*
- Smulyan, William I., BA, Franklin and Marshall College, 1965; MD, University of Maryland, 1969.\*
- Soliman, Joseph A., MD, College of Medicine, University of the Philippines, 1967.\*



- Spence, Kenneth F., BS, Washington and Lee University, 1953; MD, University of Maryland, 1957.\*  
 Suddhimondala, Chawalit, MD, Siriraj Hospital and Medical School, Bangkok, Thailand, 1960.\*  
 Sugar, Fred N., BS, University of Maryland, 1961; MD, 1965.\*  
 Szczepinski, Adam F., AB, Johns Hopkins University, 1953; MD, 1959.\*  
 Tortolani, Edmund C., BA, Brown University, 1964; MD, Yale University, 1968.\*  
 Vorasubin, Varah, MD, Siriraj Hospital, Thailand, 1967.\*  
 White, John P., III, MD, University of Maryland, 1947.\*  
 Wilensky, Robert J., BA, University of Michigan, 1962; MD, 1966.\*  
 Winakur, Stuart, BS, University of Maryland, 1963; MD, 1968.\*

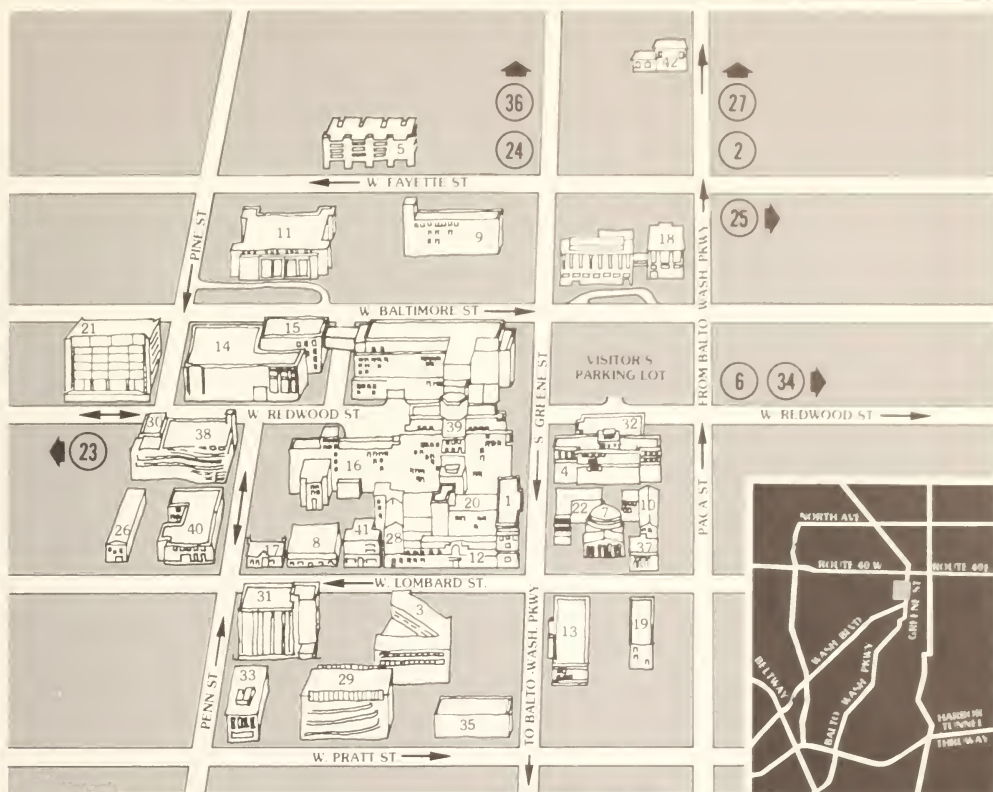
#### *Associate*

- Appleton, James R., BA, University of Iowa, 1957; MD, University of Maryland, 1961.\*  
 Ballesteros, Ruben F., MD, University of the Philippines, 1964.\*  
 Blumenfeld, Walter, BS, Antioch College, 1967.  
 Fraiman, Moises, MD, University of San Marcos, 1954.\*  
 Fraiji, Elie K., BS, University of Science, Montpeliers, France, MD, University of Paris.\*  
 Holbrook, William A., Jr., MD, University of Maryland, 1945.\*  
 Mehler, George J., BA, New York University, 1959; MD, New York Medical College, 1963.\*  
 Phelan, Patrick C., BA, Loyola College, 1935; MD, University of Maryland, 1942.\*  
 Settle, William B., BA, Loyola College, 1935; MD, University of Maryland, 1942.\*  
 Shipley, Edgar R., AB, Johns Hopkins University, 1938; MD, University of Maryland, 1942.\*  
 Stewart, Edwin H., MD, University of Maryland, 1943.\*

#### *Emeritus*

- Yeager, George H., BS, University of West Virginia, 1925; MD, University of Maryland, 1929.

\**part-time*



## BUILDING KEY, UNIVERSITY OF MARYLAND AT BALTIMORE

- 1 Albed Health Professions Building, 32 S Greene Street  
Medical Technology, School of Pharmacy, Physical Therapy, Radiologic Technology, classrooms, offices, laboratories
- 2 Alpha House, 828 N Eutaw Street (off campus)
- 3 Baltimore Union, 621 W Lombard Street  
Cafeteria, student housing, meeting rooms for students and faculty lounges
- 4 Bressler Research Building, 29 S Greene Street  
Medical school research laboratories, Baltimore offices of the university's Board of Regents
- 5 Community Mental Health and Radiation Center (under construction), Fayette and Arch Streets  
The university will use the \$12 million-plus facility jointly with the Inner City Mental Health Program and the State Department of Mental Hygiene
- 6 Community Pediatric Center, 412 W Redwood Street (off campus)  
Innovative program of comprehensive health care for children in southwestern health district. Federally funded
- 7 Davidge Hall, 522 W Lombard Street  
Built in 1812 and designed by R. Cary Long, who used the Pantheon in Rome as his model. The oldest building in the nation used continuously for medical education. The university's Medical Alumni Association plans to restore the building to its original state and open it to the public as a medical museum
- 8 Dunning Hall, 636 W Lombard Street  
School of Pharmacy classrooms and offices. Drug manufacturing laboratory information center
- 9 Fayette Street Garage, 633 W Fayette Street
- 10 Gray Laboratory, 520 Rear W Lombard Street  
Medical school offices and laboratories, Physical Therapy offices, Personnel training room
- 11 Hayden-Harns Hall, 666 W Baltimore Street  
School of Dentistry clinics, classrooms, offices. Opened in 1970
- 12 Health Sciences Computer Center, 610 W Lombard Street  
Computer Center, pharmacy school offices and labs, Medical Technology labs, Division of Clinical Investigation, Office of Student Affairs
- 13 Health Sciences Library, 111 S Greene Street  
Main library for all professional schools except the School of Law. Includes historical book collection and computerized circulation and information services
- 14 Howard Hall, 660 W Redwood Street  
Central Administration offices, medical school classrooms, offices, labs
- 15 Howard Hall Addition, 655 W Baltimore Street  
Medical school classrooms, offices, labs
- 16 Institute of Psychiatry and Human Behavior, 645 W Redwood Street (Wing of hospital)  
The medical school's center for psychiatric teaching and research as well as inpatient and outpatient care
- 17 Kelly Memorial Building, 651 W Lombard Street  
Headquarters of Maryland Pharmaceutical Association. B. Oliver Cole Museum
- 18 Law Building (Lane Hall), 500 W Baltimore Street  
School of Law classrooms, offices, library
- 19 Lombard Building, 511 W Lombard Street  
Bookstore, University Relations, Maryland Institute for Emergency Medicine, 22 S Greene Street  
The first major trauma program in the nation, combining multidisciplinary teaching and research with expert round-the-clock care for the critically ill and injured. Many patients are brought by state police helicopter from all parts of Maryland
- 20 Medical School Teaching Facility (under construction), 10 S Pine Street
- 21 Medical Technology Building, 41 S Greene Street  
Medical school offices, labs
- 22 Mettken House, 1524 Herring Street (off campus)
- 23 Methadone Program, 104 N Greene Street (off campus)
- 24 National Psittacus Agency, 210 W Fayette Street (off campus)
- 25 Under contract with the National Institutes of Health, the University of Maryland administers the NPA, which is the official agency for collection and distribution of human primate, hormones for research purposes  
Newman Center, 712 W Lombard Street
- 26 Nasson House, 826 N Eutaw Street (off campus)
- 27 Parsons Residence Hall, 462 W Lombard Street
- 28 Pratt Street Garage and Exercise Facility (under construction)
- 29 Redwood Hall, 781 W Redwood Street  
Division of Alcoholism and Drug Abuse offices (clinical area)
- 30 School of Nursing Building, 655 W Lombard Street  
Modern classroom and office facility for nursing school (completed in 1971)
- 31 School of Social Work and Administration Building, 525 W Redwood Street  
Office of the Chancellor, School of Social Work and Community Planning classrooms, offices
- 32 State Medical Education Building, 111 Penn Street
- 33 Smoke Center, 412 W Redwood Street (off campus)
- 34 Tempman Architects Building, 901 Rehr W Lombard Street  
School of Social Work and Community Planning classrooms, offices
- 35 Tarkenton House, 110 N Greene Street (off campus)
- 36 Residential building for students program of the University of Maryland Hospital. Also Alpha and Beta Houses (I)
- 37 University College, 520 W Lombard Street  
Offers degree and certificate educational programs. Medical School Office
- 38 University College, 520 W Lombard Street
- 39 University of Maryland Hospital, 22 S Greene Street
- 40 Webster-Hughes Clinic, 710 W Lombard Street
- 41 Whitman Hall, 623 W Lombard Street  
Dental School offices, meeting, planning, dental work and administrative services, offices, classrooms
- 42 Logan Services Center, 115 N Pine Street

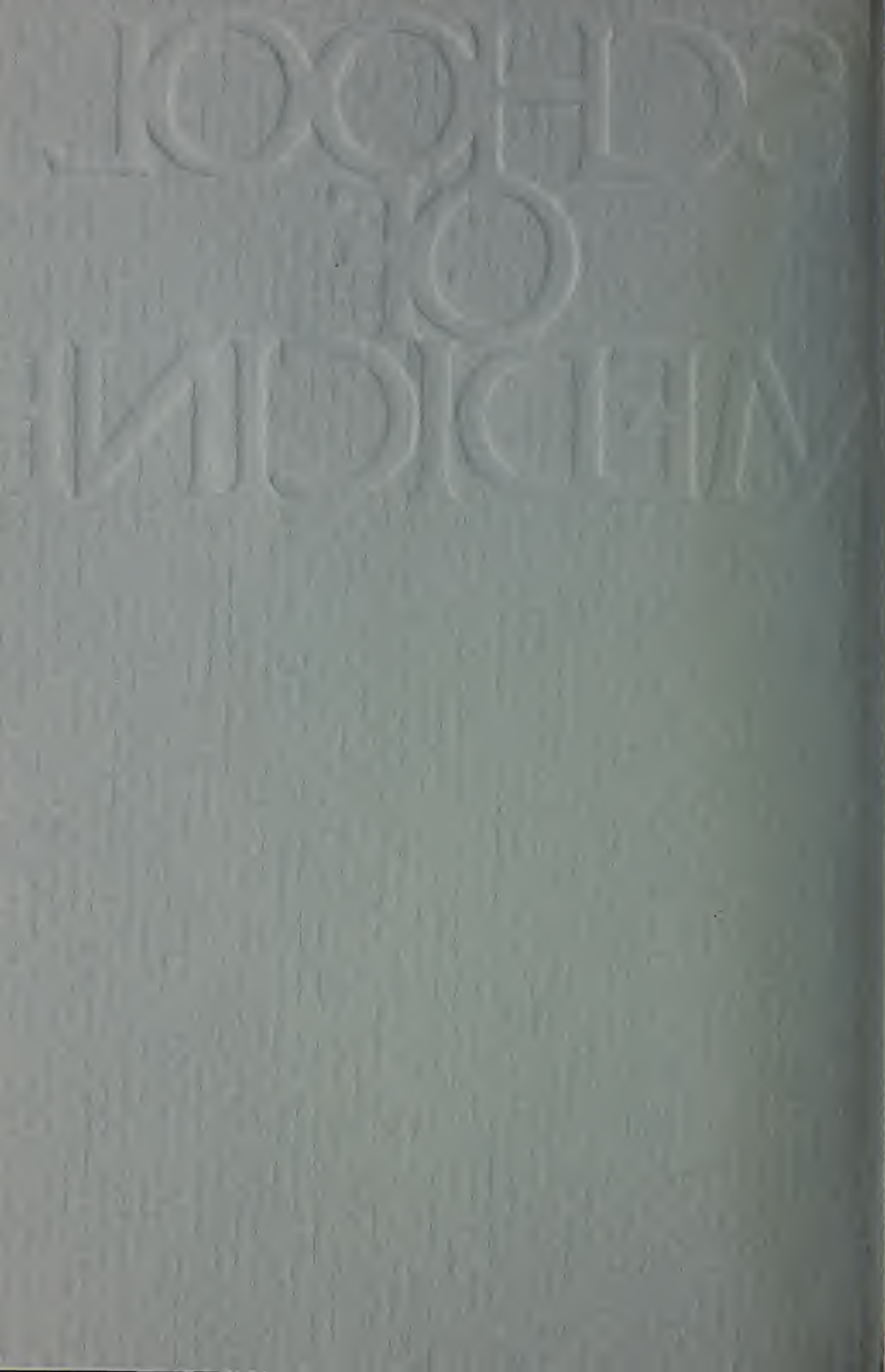


**School of Medicine**  
**University of Maryland at Baltimore**  
**Baltimore, Maryland 21201**



# SCHOOL OF MEDICINE

UNIVERSITY  
OF MARYLAND  
AT BALTIMORE  
1979-1980



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# SCHOOL OF MEDICINE

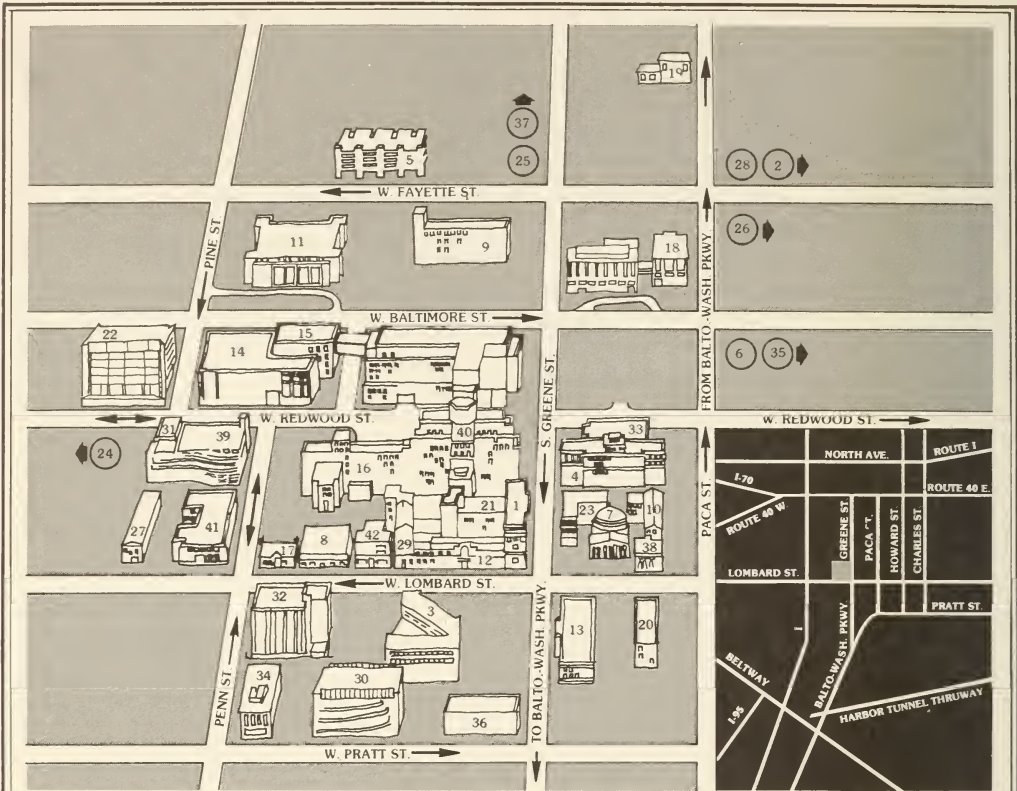


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UNIVERSITY  
OF MARYLAND  
AT BALTIMORE  
1979-1980



# CAMPUS MAP



## BUILDING KEY, UNIVERSITY OF MARYLAND AT BALTIMORE

- 1 Allied Health Professions Building, 32 S. Greene Street  
Medical Technology, School of Pharmacy, Physical Therapy, Radiologic Technology classrooms, offices, laboratories
- 2 Alpha House, 828 N Eutaw Street (off campus)
- 3 Baltimore Union, 621 W. Lombard Street  
Cafeteria, student housing, meeting rooms for students and faculty, lounges, game room, Synapse
- 4 Bressler Research Building, 29 S. Greene Street  
Medical school research labs, Baltimore offices of the university's Board of Regents.
- 5 Walter P. Carter Center, 630 W. Fayette Street  
The university uses this facility jointly with the Inner City Mental Health Program and the State Department of Mental Hygiene.
- 6 Community Pediatric Center, 412 W. Redwood Street (off campus)  
Innovative program of comprehensive health care for children in southwestern health district. Federally funded.
- 7 Davidge Hall, 522 W. Lombard Street  
Built in 1812 and designed by Robert Carey Long Sr., who used the Pantheon in Rome as his model. The oldest building in the nation used continuously for medical education. The university's Medical Alumni Association plans to restore the building to its original state and open it to the public as a medical museum.
- 8 Dunning Hall, 636 W. Lombard Street  
School of Pharmacy classrooms and offices, drug manufacturing lab, poison information center.
- 9 Fayette Street Garage, 633 W. Fayette Street
- 10 Gray Laboratory, 520 Rear W. Lombard Street  
Physical Therapy Office, Campus Police, Center for the Graduate Social Work Education of the Hearing Impaired.
- 11 Hayden-Harris Hall, 666 W. Baltimore Street  
Baltimore College of Dental Surgery, Dental School, clinics, classrooms, labs, offices.
- 12 Health Sciences Computer Center, 610 W. Lombard Street  
Computer Center, pharmacy school offices and labs, Medical Technology labs, Division of Clinical Investigation, Office of Student Affairs.
- 13 Health Sciences Library, 111 S. Greene Street  
Main library for all professional schools except the School of Law. Includes historical book collection and computerized circulation and information services.
- 14 Howard Hall, 660 W. Redwood Street  
Central Administration offices, medical school classrooms, offices, labs.
- 15 Howard Hall Tower, 655 W. Baltimore Street  
Medical school classrooms, offices, labs, Administrative offices of the medical school, including the office of dean and vice chancellor.
- 16 Institute of Psychiatry and Human Behavior, 645 W. Redwood Street (E, F and G wings of the hospital)  
The medical school's center for psychiatric teaching and research as well as inpatient and outpatient care.
- 17 Kelly Memorial Building, 650 W. Lombard Street  
Headquarters of Maryland Pharmaceutical Association. B. Olive Cole Museum.
- 18 Lane Hall, 500 W. Baltimore Street  
School of Law classrooms, offices, library, Developmental Disabilities Law Clinic.
- 19 Legal Services Clinic, 116 N. Paca Street
- 20 Lombard Building, 511 W. Lombard Street  
Bookstore, University Relations.
- 21 Maryland Institute for Emergency Medical Services, 22 S. Greene Street  
The first major trauma program in the nation, combining multidisciplinary teaching and research with expert round-the-clock care for the critically ill and injured in the state.
- 22 Medical School Teaching Facility, 10 S. Pine Street  
Medical school classrooms, offices, research labs, animal facility, Office of Medical Education, Illustrative Services.
- 23 Medical Technology Building, 31 S. Greene Street  
Medical school offices, labs.
- 24 Mencken House, 1524 Hollins Street (off campus)
- 25 Methadone Program, 104 N. Greene Street (off campus)
- 26 National Pituitary Agency, 210 W. Fayette Street (off campus)  
Under contract with the National Institutes of Health, the University of Maryland administers the NPA, which is the official agency for collection and distribution of human pituitary hormones for research purposes.
- 27 Newman Center, 712 W. Lombard Street
- 28 Nilsson House, 826 N. Eutaw Street (off campus)
- 29 Parsons Residence Hall for Women, 622 W. Lombard Street
- 30 Pratt Street Garage and Athletic Facility, 646 W. Pratt Street
- 31 Redwood Hall, 721 W. Redwood Street  
Division of Alcoholism and Drug Abuse offices, clinical areas.
- 32 School of Nursing Building, 655 W. Lombard Street  
Nursing school classrooms, offices.
- 33 School of Social Work and Administration Building, 525 W. Redwood Street  
Office of the chancellor, School of Social Work and Community Planning classrooms, offices.
- 34 State Medical Examiner's Building, 111 Penn Street
- 35 Stroke Center, 412 W. Redwood Street (off campus)
- 36 Temporary Academic Building, 601 Rear W. Lombard Street  
School of Social Work and Community Planning classrooms, offices.
- 37 Tuerk House, 106 N. Greene Street (off campus)  
Residential facility for alcoholism programs of the University of Maryland Hospital. (Also Alpha and Nilsson Houses.)
- 38 University College, 520 W. Lombard Street  
Offers degree and non-degree educational programs. Juvenile Law Clinic.
- 39 University Garage, 701 W. Redwood Street  
Helistop.
- 40 University of Maryland Hospital, 22 S. Greene Street
- 41 Western Health Clinic, 700 W. Lombard Street
- 42 Whitehurst Hall, 624 W. Lombard Street  
Graduate School office, nursing, pharmacy, social work and community planning offices, classrooms.

The campus has since January 1975 attempted to identify and eliminate as rapidly as possible and wherever feasible, physical barriers and safety hazards to handicapped persons involving campus buildings, parking places and other facilities.

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# CALENDAR

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## UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

### 1979-1980 ACADEMIC CALENDAR

#### FALL SEMESTER 1979

August 21-24	Tuesday-Friday	Arena Registration
August 27	Monday	Instruction Begins
September 3	Monday	HOLIDAY — Labor Day
November 5-16	Monday-Friday	Preregistration for Winter and Spring
November 22-23	Thursday-Friday	HOLIDAY — Thanksgiving
December 12	Wednesday	Instruction Ends
December 13-19	Thursday-Wednesday	Examinations
December 19	Wednesday	Semester Ends

#### WINTER SESSION 1980

January 3	Thursday	Arena Registration
		Instruction Begins
January 15	Tuesday	HOLIDAY — Martin Luther King's Birthday
January 29	Tuesday	Winter Session Ends

#### SPRING SEMESTER 1980

January 29	Tuesday	Arena Registration
January 30	Wednesday	Instruction Begins
February 18	Monday	HOLIDAY — Washington's Birthday
March 31-April 4	Monday-Friday	Spring Vacation
April 9-20	Monday-Friday	Preregistration, Fall 1980
May 21	Wednesday	Instruction Ends
May 22-28	Thursday-Wednesday	Examinations
May 29	Thursday	Commencement 3:00 p.m.
May 30	Friday	HOLIDAY — Memorial Day



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# THE SCHOOL, THE CAMPUS, THE CITY

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## THE SCHOOL

The University of Maryland School of Medicine, the fifth medical school to be founded in the United States, was established in 1807 by the General Assembly of the State of Maryland. The principles upon which the school was established have not changed, as they were stated in the Founding Act: "Be It Enacted . . . That a College . . . by the name of the College of Medicine of Maryland, be established . . . upon the following fundamental principles . . . The said College shall be founded and maintained forever upon a most liberal plan, for the benefit of students of every country and every religious denomination, who shall be freely admitted to equal privileges and advantages of education, and to all the honors of the College, according to their merit, without requiring or enforcing any religious or civil tests." The school was integrated racially almost from its inception, and women were first admitted in 1921.

A Board of Regents was selected, and Dr. John Beale Davidge, one of the founders, was appointed as the first dean of the new school. Under his farsighted leadership, a new concept of medical education was formed: "The science of medicine could not be successfully taught under the usual organization of medical schools; that without the aids of physiology and pathology, either associated with anatomy or as a separate chair of institutes, the philosophy of the body in sickness or in health could not be understood."

At the end of 1807, a medical school existed in Baltimore with officers and faculty, but without buildings or funds. Dr. Davidge and his small faculty continued to teach in their own homes, as they had been doing prior to the official Founding Act. From the beginning, strong emphasis was placed on "bedside" teaching, with the first class of seven students receiving clinical instruction at the Baltimore Almshouse, a workhouse and infirmary for the poor. This emphasis has continued over the years, and the concept of direct patient contact remains important today.

A lottery was authorized to finance building, but it was largely due to the enthusiasm and dedication of early faculty members and interested Baltimore citizens that the College of Medicine was able to establish a campus. Land was purchased from Col. John Eager Howard, Revolutionary War hero and former governor, for the sum of \$10,000 of which Col. Howard donated \$1,000. The lot, at what is now Lombard and Greene Streets, was then on the outskirts of town affording a clear view of the Patapsco River. Its remote site was considered an advantage since the public was violently opposed to dissection of the human body, as Dr. Davidge was well aware, having had his own small anatomic theater destroyed several years previously by an angry mob.

The first building, now known as Davidge Hall, was constructed on the lot in 1812, and is the oldest building in the United States used continuously for medical education. Its architect, Robert Carey Long, Sr., used the Pantheon in Rome as his model for the building. In spite of remodeling throughout the years, some of the dissecting "cubbyholes" still remain, along with secret stairways and hidden exits which afforded both students and professors safe passage from angry mobs. Plans call for Davidge Hall to be full restored to its original state and maintained as a medical museum.

In 1823, the Baltimore Infirmary, the forerunner of the University of Maryland Hospital, was built across from Davidge Hall. The school was one of the first in the country to build its own hospital for clinical instruction; and it was here that intramural residencies for senior students were first established. This building was still in active use until 1973, when all the clinics located there were moved into the new addition to the University of Maryland Hospital.

Through the years, there have been many "firsts" at the School of Medicine. One of the early faculty members, Dr. John Crawford, who had been the first to vaccinate Baltimoreans against smallpox in 1800, presented evidence as early as 1810 that tuberculosis was contagious. His personal library became the nucleus of the medical school library, one of the oldest in the country. In 1839, the Baltimore College of Dental Surgery was incorporated, the first such school to be established in the world. The techniques of auscultation and percussion were taught here for the first time in America as early as 1841; and in 1844, Dr. David Stewart, the first professor of pharmacy in the United States, initiated his lectures at Maryland.



From the beginning, the study of human anatomy was recognized as basic in medical education, but the public outcry and the difficulty in obtaining bodies limited dissection. Still, in 1848, Maryland became the first medical school to make anatomical dissection a required course. Six years later, compulsory courses in experimental physiology and microscopy were introduced. A milestone in cancer research occurred in 1853, when Dr. Francis Donaldson became the first person in America to advocate biopsy and microscopic diagnosis of malignancy. Maryland was the first to establish chairs in the diseases of women and children (1867), and diseases of the eye and ear (1873).

Mergers with the Baltimore Medical College in 1913 and the College of Physicians and Surgeons in 1915 provided the University of Maryland School of Medicine with greatly expanded faculty and clinical facilities. In 1920, the state university was established when the professional schools in Baltimore merged with the Maryland State College of Agriculture in College Park and the state assumed financial obligation for all the schools.

## THE CAMPUS

Today, the School of Medicine is part of a professional campus located on 31 acres in downtown Baltimore. This campus, comprising the schools of dentistry, law, medicine, nursing, pharmacy, social work and community planning, in addition to the Graduate School and University of Maryland Hospital, offers the medical student a unique opportunity to participate in the growing number of interdisciplinary educational programs carried out among the professional schools. An interprofessional Task Force on Aging was formed in 1978 in an effort to stimulate and coordinate geriatric educational activities among the six professional schools.

Plans are underway for an intensive expansion of the primary care programs, a multidisciplinary effort under the leadership of the vice chancellor for health affairs, that includes increased utilization of a number of primary care education centers throughout the state, located in inner city and rural communities. Students from the schools of dentistry, medicine, nursing, pharmacy, and social work and community planning have an opportunity to participate in the educational experiences offered in these centers.

The UMAB campus is in the midst of a physical expansion program as well. Two new teaching facilities for the School of Medicine have recently been erected and the schools of law, pharmacy, and social work and community planning are in the process of planning new buildings. In the near future, a new V.A. Hospital will be built across from the University of Maryland Hospital on Baltimore Street, contributing greatly to the growing resources available to the medical student.





## THE CITY

Statistically, Baltimore is the largest city in Maryland, the seventh most populous in the nation, and site of the country's fourth largest foreign-commerce seaport. The Baltimore region has much to offer the student, from the sophistication and culture of a large, metropolitan city, to the beauty and leisure of the waterfront and rural areas that surround it.

Having been the location of many significant events in the nation's history, including the writing of the national anthem, Baltimore maintains a strong feeling for the past as typified by the many charming neighborhoods of restored houses and abundance of historic buildings.

And yet Baltimore has become increasingly forward-thinking, and is making outstanding progress in the revitalization and rebirth of its downtown area. A prime example is Charles Center, one of the early models for urban planning in the country, which incorporates a theater, hotel, shops, and a series of plazas and elevated walkways that are used as settings for frequent fairs, concerts, art shows and festivals. Even closer to campus, one of the most exciting renovations is taking place in the inner harbor. When completed, some 240 acres surrounding the busy port will be redeveloped to include office buildings, apartments, schools, parks, recreational facilities — in all, an entirely new living and working complex.

As a cultural center, Baltimore has offerings to please the most discriminating. It possesses an excellent symphony, a professional opera company, many professional and semi-professional theaters, the Peabody Conservatory of Music, outstanding museums, excellent libraries, and historical and scientific societies, the newest of which is the Maryland Academy of Sciences Center that opened in the inner harbor area in 1976.

Sports fans, too, have a lot to savor in Baltimore thanks to the wide range of professional and collegiate teams. The city is famous, of course, for the Orioles and the Colts, but both spectators and participants will also find excellent hockey, soccer, lacrosse, basketball, horseracing, golf and tennis close at hand. Also nearby is the Chesapeake Bay, offering numerous water sports and the seafood for which Baltimore is famous.



# RESOURCES

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## THE UNIVERSITY OF MARYLAND HOSPITAL

The University of Maryland Hospital, one of the nation's first teaching hospitals, provides the primary clinical setting for the University of Maryland School of Medicine. A public not-for-profit institution, the hospital is dedicated to providing quality health care for the people of Maryland, to preparing men and women for the practice of medicine and the allied health professions, and to carrying out research to improve the quality of health care.

While the science of medicine can be taught in the classroom, the art of medicine must be learned where it is actually practiced. In the United States, the tradition of physicians training their successors in a hospital setting was born at the University of Maryland. For more than a century and a half, patients have benefited from the additional care and attention provided by the men and women receiving their clinical training here.

Since its founding in 1824, the hospital has become a major tertiary care referral center which offers the full range of specialized medical and surgical services. In recent years, as the number of health care facilities in urban centers has decreased, the hospital has assumed increasing responsibility for its surrounding community. As a result, more than 100,000 city residents look to the University of Maryland Hospital for their primary source of health care.

The 864-bed hospital is one of the nation's busiest. In one year, it records approximately 20,000 in-patient admissions, 300,000 out-patient visits, and 50,000 emergency room visits. Two thousand babies are born here each year. Every day, nearly 5,000 people pass through the hospital's doors. The senior medical staff — more than 435 physicians — is comprised of the clinical faculty of the School of Medicine. They supervise the training of the 575 graduate physician house staff as well as the medical students.

Because of its unique professional and academic environment, many outstanding treatment programs and research facilities have been attracted to the hospital. The shock trauma center of the Maryland Institute for Emergency Medical Services is located here as is the Baltimore Cancer Research Center, the National Cancer Institute's internationally renowned center for developing new cancer treatment modalities. In addition, Maryland's Center for Vaccine Development, the Institute of Psychiatry and Human Behavior, and the nation's largest Sudden Infant Death Syndrome (SIDS) research center are located at University of Maryland Hospital.

A heliport adjacent to the hospital permits rapid transportation of the most severely injured and acutely ill citizens from around the state. In addition, critically ill newborn babies throughout Maryland are flown to the hospital's outstanding neonatal intensive care nursery. The institution's facilities also include intensive care units serving seven medical specialties and an extensive rehabilitation medicine program.

The hospital's ambulatory care facilities are housed in a modern 13-story structure where more than 60 specialty clinics are available. These are augmented by separate emergency medical units for both children and adults. The hospital's commitment to the provision of alternatives to specialized medical care is born out in the presence of a family health center and several primary care clinics.

The University of Maryland Hospital has grown both professionally and physically during the years. The move from century-old buildings to modern facilities brought active cooperation with many of the university's professional schools. Today, the hospital is the training site for a broad spectrum of health professionals including pharmacists, social workers, dentists, nurse practitioners and various health-related professionals and technicians. This interprofessional environment is a unique and valued characteristic of the University of Maryland Hospital.

## AFFILIATIONS

The clinical facilities used in the teaching programs of the School of Medicine are numerous and varied in order to offer a broad spectrum of opportunities ranging from basic health care to complex medical problems requiring expensive, highly specialized facilities and staff.



Crucial to medical care today are the community hospitals in which the majority of primary and secondary level health care problems are seen. Recognizing these facts, the medical school has developed a network of institution-to-institution affiliations with community hospitals at three educational levels: undergraduate, graduate and postgraduate.

A closely-knit undergraduate affiliation exists with six community hospitals serving a wide range of patients in varied geographic settings. They are Maryland General, Mercy, Prince George's General, Provident, South Baltimore General, and York (Pa.) hospitals. Each has made a major commitment towards being an area health education center, firmly believing that the end result of a teaching environment is better patient care. Central to this are programs devoted to the continuing education of all staff. In addition, all have well-developed graduate education programs which attract interns and residents who wish to train in a community hospital atmosphere. These hospitals have recruited full-time educators in most departments, who hold academic appointments as full-time faculty members and participate in activities of the medical school.

Closely linked with the University of Maryland Hospital are the Baltimore and Ft. Howard Veterans Administration hospitals. Within a few years the Baltimore Veterans Administration Hospital will be completely integrated with the medical school and located on this campus. Currently, it is supervised by a dean's committee and the departments of medicine and pathology provide complete faculty and housestaff coverage.

Still other facilities are needed to complete the educational opportunities for physician training. Special programs involving one or more departments are conducted at Montebello State Hospital, a state rehabilitation and chronic care facility; the John L. Deaton Medical Center, an extended care and rehabilitation facility; Baltimore City Hospitals, an acute care general hospital; Mount Wilson Hospital, a state tuberculosis facility; James L. Kernan Hospital, for children and adults with specialized orthopaedic problems; the Sheppard-Pratt Hospital, a private psychiatric hospital; and Springfield, Spring Grove and Rosewood, state mental health hospitals.

**Baltimore Veterans Administration Hospital.** The hospital was constructed in 1952 on a 15-acre campus located approximately three miles from the Johns Hopkins Medical Institutions and four miles from University of Maryland Hospital.

The mission of the hospital is to provide general medical and surgical care for eligible veterans and to operate a small, active drug treatment program and an out-patient clinic for service-connected problems. It is affiliated with the medical schools of both University of Maryland and Johns Hopkins University. The medical, laboratory, genitourinary surgery, drug treatment-psychiatric services are linked with the University of Maryland Hospital while the surgical service (including general, neuro, orthopaedic and ophthalmic surgery) is associated with Johns Hopkins University School of Medicine. The radiology service is affiliated with both schools. All of the 47 full- and part-time staff plus 217 consultants and attending physicians are active faculty members of one of the medical schools.

The 67 interns and residents are selected by the medical schools and rotated for blocks of time to the University of Maryland or the Johns Hopkins hospitals, as well as to the Baltimore Veterans Administration Hospital. In addition to medical students, nursing, social work and psychology students rotate through the hospital for portions of their training. The active and growing research program adds to the academic aspects of the environment.

The medical library contains 183 current periodicals, 3,137 books and monographs and obtains many interlibrary loans from the two affiliated medical schools.

House officers and students from the various health science disciplines also rotate through the Ft. Howard Veterans Administration Hospital. This hospital emphasizes rehabilitation medicine and provides extended care for veterans recovering from serious illness or injury. A close-working relationship exists between the Baltimore and Ft. Howard Veterans Administration hospitals whose services complement each other.

**Maryland General Hospital.** The hospital has been meeting the health needs of downtown metropolitan Baltimore since it was founded in 1881. As an institution which is constantly growing and expanding, the hospital offers a broad range of modern facilities and equipment. Through the years, MGH has expanded from a capacity of 50 beds to its present bed complement of 365.

Construction of a new special procedures-cardiac catheterization room was completed in 1976. Located adjacent to the Department of Radiology, this \$400,000 unit houses highly sophisticated x-ray equipment utilized in the special diagnostic procedure of angiography.

In 1978, a comprehensive in-patient psychiatric facility was established for the diagnosis and management of neuro-psychiatric illness.

The Coronary Care Unit features the latest in electronic monitoring devices. Developments in kidney research are centered in the renal lab equipped with a Travenol RSP Artificial Kidney. The unit also specializes in home training for kidney dialysis.

Other special areas such as the Department of Nuclear Medicine, Gastroenterology, Pulmonary Laboratory, Physical Therapy, and a complete research department are all part of the growth of Maryland General Hospital.

Maryland General Hospital is a nonsectarian, fully accredited, voluntary teaching hospital affiliated with the University of Maryland. A cooperative agreement between the university and MGH provides clinical experience for many university medical students. An active intern and residency program is a vital part of the MGH philosophy of providing outstanding patient care through continuous research and education. In addition, MGH operates its own Schools of Nursing and Radiologic Technology.

The Maryland General Hospital is a member of the Maryland Health Care System, Inc., a regionally integrated, multi-unit, nonprofit health care delivery system; The American Hospital Association; The Hospital Council of Maryland, Inc; The Maryland-Delaware-District of Columbia Hospital Association; and The Council of Teaching Hospitals.

**Mercy Hospital.** Its history can be traced to the foundation of the Washington University School of Medicine in 1827. In 1872, some of the members of this institution founded a new school, which was the beginning of the College of Physicians and Surgeons of Baltimore.

Washington University School of Medicine opened a dispensary and a small hospital at the corner of Saratoga and Calvert streets and named it the Baltimore City Hospital. This building served both as a hospital and a medical school. In 1874, the Sisters of Mercy, upon the invitation of the Washington University School of Medicine, assumed responsibility for the nursing services of the hospital. In 1878, Washington University merged with the College of Physicians and Surgeons.

The Sisters of Mercy, in 1888, with the assistance of the faculty of the College of Physicians and Surgeons, laid the cornerstone for a new hospital adjacent to the earlier buildings. The name of the institution was changed to Mercy Hospital in 1909; and, in 1911, another larger building was formally opened, occupying the remaining frontage on that block of Calvert Street. Mercy Hospital arranged, in 1921, to purchase the original College of Physicians and Surgeons building from the University of Maryland.

Many additions have been made to Mercy's physical plant over the years. The present 21-story hospital on St. Paul Place, close to the commercial center of Baltimore, was opened in 1963. A large, modern ambulatory patient department with numerous design innovations to accommodate both private and clinic patients was completed in 1969. Mercy's community outreach program today includes satellite clinics for out-patient services in South Baltimore, Little Italy and Northeast Baltimore. The Robert Wood Johnson Foundation in 1976 granted Mercy nearly \$500,000 to expand its services at the Mercy Southern Health Center in South Baltimore.

The hospital is very active in the teaching program of the University of Maryland School of Medicine. Faculty members serve as full-time heads of medicine, surgery, pediatrics and



obstetrics-gynecology. Medical students rotate through the Mercy clinical services during the second, third and fourth years. A School of Medical Technology and a School of Radiologic Technology are conducted in conjunction with the hospital. In addition, the hospital presents a number of seminars and symposiums with credits toward continuing education for physicians and surgeons.

During the year ending June 30, 1978, there were 11,652 general admissions, 121,297 out-patient visits, 1,537 obstetrical deliveries and 28,118 visits to the Emergency Medicine Department. The bed capacity is 350 plus 36 bassinets. All hospital beds are available for teaching purposes.

**Prince George's General Hospital and Medical Center.** The hospital first opened its doors to the public on March 21, 1944, with a capacity of 100 beds. As the population of Prince George's County increased, the hospital expanded to 235 beds; and in 1959, the bed capacity was further increased to 385.

During 1968, a nine-story addition to the main building increased bed capacity to 500. An extended care facility of 100 beds was also added as well as a 36-apartment complex for interns and residents, and a new and larger power plant.

An 18-bed Alcoholic and Drug Detoxification Unit was added in July, 1972, bringing the total number of beds to 614. This program complements the comprehensive mental health program of the county which provides emergency, out-patient, and in-patient psychiatric services.

Prince George's General Hospital and Medical Center is one of the largest hospitals in the Washington suburban area and is a leading hospital in number of admissions, emergency treatments and clinical out-patient visits in the entire metropolitan area. It is a general teaching hospital approved by the Joint Commission on Accreditation of Hospitals. The hospital also maintains membership in the American Hospital Association, the American College of Physicians, the American College of Surgeons, and the American Medical Association.

Affiliation with the University of Maryland School of Medicine was established to promote the opportunities for furthering medical education of physicians in training and licensed physicians in practice who are members of the medical staff of Prince George's General Hospital and Medical Center. Lectures are given daily at the medical center by faculty members from various medical schools and case presentations follow which are representative of the content of the lecture.

The institution is also an education center in the training of specialized health careers. The hospital serves as the clinical facility for the Prince George's Community College Associate of Arts Degree Programs in Nursing, Radiologic Technology, Medical Technology, Nuclear Medicine Technology, and Nurse Anesthetist. It is approved for the training of physicians with residency specialties in surgery, medicine, obstetrics and gynecology, and family practice.

Over 400 well qualified physicians and surgeons have privilege to admit and treat patients at the hospital.

During 1978, there were 21,119 general admissions, 14,866 out-patient clinics visits, 3,000 obstetrical deliveries and 70,000 emergency room visits. The bed capacity is 655 including 100 in the extended care/subacute facility. Construction is now underway for an ambulatory care facility which will expand the many specialized clinics serving the community.

**Provident Hospital.** Since its establishment on June 13, 1894, Provident Hospital has grown from a ten-bed infirmary to a modern 271-bed hospital complex. The busy, well-equipped emergency rooms and out-patient clinics combined with Provident's outreach programs (Provident Druid Children and Youth Development Center, Sickle Cell Anemia Clinic and Program, Project A.D.A.P.T. concerning drug abuse, Provident Quarterway House, Alcoholism Liaison Service Program, and Community Mental Health Program) testify to Provident's genuine commitment to meeting the needs of a chiefly black urban community.



Excellence in patient care is at all times the program's main objective. Provident's community orientation and the broad spectrum of cases available enhance the learning experience. Orientation and instruction in this urban setting are achieved through ward rounds, lectures and bedside teaching. In addition, work in the out-patient department is supervised by members of the active visiting staff of the respective services.

**South Baltimore General Hospital.** Founded in 1904 as a specialty clinic, the hospital expanded within 14 years to a general hospital in order to fully serve the medical needs of South Baltimore. In 1968, the hospital's activities were transferred to its present modern and spacious facilities at 3001 South Hanover Street, overlooking the scenic and historic harbor area. The new location underscores the hospital's commitment to its urban and industrial communities and makes it readily accessible to patients from neighboring suburban areas.

Its current bed capacity of 408 has averaged an occupancy of over 85%. To meet the growing needs of the community, plans are now underway to construct additional facilities to increase the bed capacity of 534 and to expand the present capacity for ambulatory care and medical education.

Each year, over 14,000 patients are admitted for hospital care. Approximately 10,000 surgical procedures are performed annually. Special emphasis is given to the capacity to handle industrial and vehicular trauma. Over 65,000 patient visits are made to the emergency room and out-patient clinics, and approximately 1,400 babies are delivered each year.

The hospital has a strong commitment to medical education at all levels. All departments and major divisions are headed by full-time directors, most of whom are on the University of Maryland School of Medicine faculty. Medical students receive instructions at the hospital during their second, third, and fourth years. Graduate education consists of approved residencies in medicine, surgery, obstetrics-gynecology, pathology, and a university-affiliated program in pediatrics. An active program of continuing education is maintained for practicing physicians. In addition, the hospital maintains a School of Practical Nursing and Radiologic Technology, and provides clinical facilities for five nursing schools.

**York (Pa.) Hospital.** From its beginning in 1880 with just 12 beds to serve a community of 16,000, York Hospital has grown, on a site established in 1930, to meet today's needs for a population of over 275,000 from the greater York area and communities along the northern Maryland line. Annual admissions exceed 20,000, and more than 60,000 visits are made to the emergency room and out-patient departments each year.

A multi-million dollar expansion program recently doubled the size of the hospital; increased its bed complement to 560, of which 50 are monitored; and created new operating rooms, intensive care units, radiology and laboratory facilities, ambulatory care areas, and additional in-patient nursing units. A modern educational complex with closed-circuit TV houses classrooms, seminar and conference rooms, library, and a large auditorium to accommodate the teaching needs of medical education and the five allied health schools—medical records administration, medical technology, nuclear medicine technology, radiologic technology, and respiratory therapy.

York Hospital has a medical staff of more than 225 organized into the usual departments and divisions of a major health care institution. The most recent additions are in open-heart surgery and renal dialysis.

Graduate medical education programs include flexible internships and approved residencies in family practice, medicine, obstetrics/gynecology, pathology, and surgery. Additional teaching programs exist in cardiology, emergency room/out-patient services, endocrinology, gastroenterology, hematology/oncology, infectious diseases, neurology, nuclear medicine, pediatrics, psychiatry, pulmonary services, and radiology/radiotherapy.

More than 50 students from the University of Maryland School of Medicine elect York Hospital rotations each year. Faculty leadership and supervision is provided by full-time coordinators in each major teaching department. Instruction is provided by a full-time staff of more than 20, and major commitments from the voluntary attending staff.

## AREA HEALTH EDUCATION CENTER PROGRAM

One of the University of Maryland at Baltimore's commitments toward improving health care and delivery programs in primary care is the Area Health Education Center (AHEC) program.

The AHEC program has been developed to provide a comprehensive health care education program for undergraduate and graduate medical students, as well as for students from the other four UMAB health professional schools. The university received formal legislative support for the AHEC program in 1976, when the Maryland State Legislature passed a bill which established a formal mechanism for the university to create AHECs, described as "multiple health education and training centers [which] will attract students, interns and residents to the several geographic areas, thereby attracting increased numbers of practicing physicians, encouraging development of health care facilities, providing for the training of additional numbers of allied health care professionals and increasing capabilities for the existing program of graduate and continuing medical education and health training." The organization thus formed was the Maryland Statewide Medical Education and Training System.

There are three basic types of AHECs established: rural, inner city and aged. The first actively functioning AHEC is in Cumberland, a rural community in Western Maryland. The purpose of this center is to provide students with an opportunity to understand the valuable and rewarding benefits of delivering primary health care in a rural environment and of the contributions they can make toward the continuing improvement of such care in this or similar communities. As a result, it is hoped the students' career choices will be influenced positively toward practice in such a setting and, in the majority of instances, as primary health care providers.

Senior medical students may choose a rotation in Cumberland (and, in the future, at other AHECs) as one of their elective experiences in primary care. All internal medicine and pediatric housestaff in the primary care programs will serve a rotation in an AHEC location.

With the help of state and federal funding sources, the inner city or urban and geriatric AHECs are now being developed. The former will be operational in the Fall of 1979, the latter in 1980. These two centers will provide opportunities for students on the UMAB campus to elect from a broad spectrum of primary care educational opportunities.

An additional rural AHEC is planned for Maryland's Eastern Shore and another is projected which will direct its attention to adolescent and/or college health services.

As a matter of school policy, it is expected that ten percent of all clinical education will be taken by students in an AHEC site.

## INTERNATIONAL HEALTH PROGRAM

In accordance with objectives of the International Health Research Act of 1960, International Centers for Medical Research were created under the auspices of the National Institutes of Health to advance the status of international health. Congress further expressed the hope that "a program through United States universities for the early development of research and research training centers with adequate field opportunities for international studies" would be established.

Thus the Office of International Research of the National Institutes of Health provided for the establishment of such a center at the University of Maryland School of Medicine in March 1961, to conduct scientific programs both in Baltimore, Maryland and abroad in Lahore, Pakistan.

The programs share these objectives:

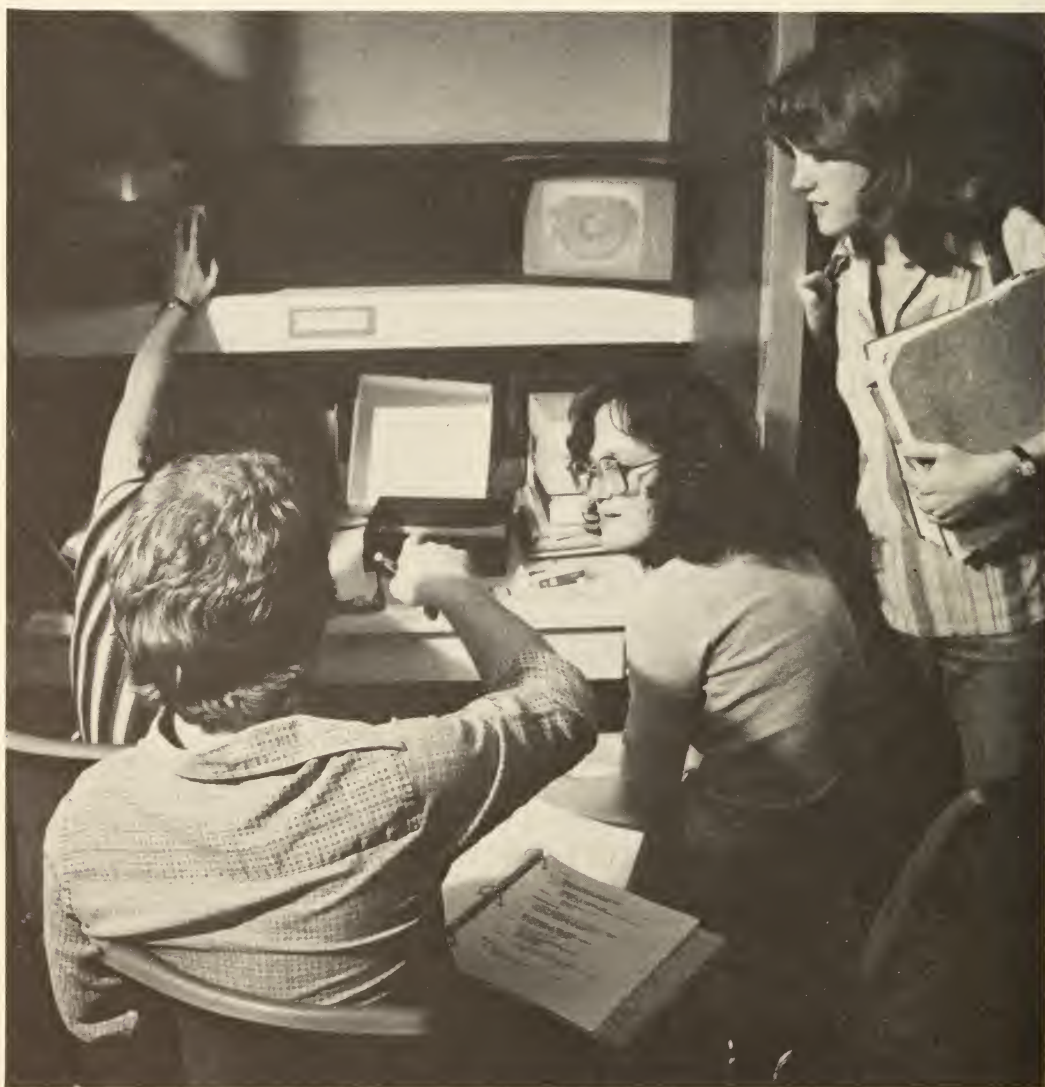
- To conduct medical and paramedical research at the domestic and overseas sites.
- To provide research opportunities in international health problems for American physicians and allied professional workers, and their counterparts in Pakistan.
- To create, through scientific endeavors, an atmosphere of mutual understanding and friendship between Pakistan and the United States.



These programs provide opportunities for postdoctoral research in the fields of infectious disease — microbiology, medical entomology, epidemiology and parasitology. Current projects include mosquito biology, ecology and genetics, malariology and arbovirology. Often overlapping interests result in joint research projects. At present, projects involve collaboration with the following organizations or institutions: the Center for Disease Control (U.S.), the U.S. Agency for International Development, the U.S. Department of Agriculture, the U.S. National Museum, Auburn University, the University of Illinois, Gordon College (Pakistan), King Edward Medical College (Pakistan), the Institute of Hygiene and Preventive Medicine (Pakistan), the Pakistan Medical Research Council, the World Health Organization, the Imperial College of Science and Technology (England), and the Bureau of Quarantine (Philippines).

Appointments to the program are made at the research associate level. Upon acceptance into the program each research associate, with the aid of an advisor, devises a plan of research. Assignment to divisions and appointment of advisors depend upon the candidate's background, interests and the program's personnel needs. Following a basic orientation course, each research associate begins or joins an overseas research project, which frequently involves both field and laboratory work. Appointments are for one to three years.

Further inquiries should be addressed to the International Health Program, Room 519, Howard Hall, 660 West Redwood Street, Baltimore, Md. 21201.





## OFFICE OF MEDICAL EDUCATION

The Office of Medical Education was developed in 1969 as a consultative and research arm of the Curriculum Committee. In 1972 it was substantially expanded and reorganized and currently serves as a consultative unit to all departments of the medical school in the following areas:

- Instructional design, implementation and evaluation;
- Faculty seminars regarding new developments in instructional design and educational technology;
- Educational resources including audiovisual aids, instructional television and computer-assisted instruction;
- Development and implementation of computer-based instructional systems;
- Assistance and evaluation in curriculum development;
- Coordination of library facilities to include the storage and retrieval of all non-printed educational material and software;
- Investigation and utilization techniques for clinical teaching;
- Maintenance, distribution and operation of projection and related audiovisual equipment for use in teaching;
- Tutorial assistance and study skills;
- Classroom scheduling;
- Research in medical education.

## Illustrative Services

The Department of Illustrative Services is a functioning component of the Office of Medical Education. The department supplies audiovisual aids to medical school faculty and staff for teaching, research and publication purposes. The primary services include illustration, photography, and offset printing.

**Illustration.** Services include comprehensive renderings of surgical and clinical techniques, anatomical renderings, statistical charts and other graphic representation, simple and comprehensive design and finishing of flyers, brochures, programs and posters. Also included are layout and paste-up for offset printing and photographic copying. In addition, this section is responsible for the design and finishing of displays and exhibits.

**Photography.** The division handles photographic copying of flat material such as written matter, x-rays, laboratory tracings and data; photography of specimens, equipment set-ups, surgical, clinical and laboratory activities; and portraiture for school-related purposes. The department is equipped for photomicrography (large and small format), slide duplication and motion picture photography. It further acts as a collection station for commercial processing of color photography.

**Offset Printing.** This section furnishes volume duplication and offset printing, through photographic enlarging or reduction involving either line or half-tone. The plant is equipped for finishing such as collating, folding, stapling, punching, cutting and padding.

## HEALTH SCIENCES LIBRARY

The Schools of Medicine, Dentistry, Pharmacy, Nursing, Graduate Studies, Social Work and Community Planning, and the University of Maryland Hospital and its affiliated institutions are served by the Health Sciences Library in a modern, four-story building. It is one of the oldest medical college libraries in the country, dating back to 1813 when the University of Maryland purchased Dr. John Crawford's personal collection to form a medical library.

The library, containing more than 220,000 bound volumes, with 3,100 current periodical subscriptions, is ranked one of the top 15 medical libraries in the nation. Its collection is more varied than those of most other medical libraries, with the subject scope encompassing the basic biomedical and health-related sciences as well as the social and behavioral sciences. Thus, in providing literature to support the teaching, research and health care programs on the campus, the library makes available a wide range of materials to the medical community.

The Health Sciences Library has established an innovative outreach service program which adds a new dimension to library service on campus. Each of six Information Specialist librarians is assigned to one of the professional schools or the hospital. The Information Specialists participate in collection evaluation and development in the respective subject areas related to their assigned professional school, teach seminars and orientations in information retrieval, serve as information consultants as well as being responsible for the Computerized Reference and Bibliographic Service (CRABS) which provides customized subject bibliographies.

The library has access to over 30 computer data bases in the sciences and the social sciences including MEDLINE, Psychological Abstracts, ERIC, TOXLINE, and Social Sci-search.

The Reference Services staff also provides traditional reference service.

Interlibrary Loan service is available for needed materials not held in the library collection.

A Computer-Assisted Instruction (CAI) terminal is available free of charge to all UMAB students. This terminal allows access to self-instructional programs in the health sciences from Ohio State University and from Massachusetts General Hospital.

Self-service photocopy machines are available on all floors of the library.

The library is open 8:00 A.M. — 10:00 P.M. (Monday-Friday), 9:00 A.M. — 5:00 P.M. (Saturday) and 2:00 P.M. — 9:00 P.M. (Sunday). Special holiday and summer hours are posted.

## **SCHOOL OF MEDICINE ENDOWED LECTURES**

<b>Name of Lecture</b>	<b>Subject</b>
Thurston R. Adams	Surgery
Alice Messinger Band	Hematology
Herbert Berger	Internal Medicine
Myer and Etta Dana	Psychiatry
C. Reid Edwards	Surgery
Julius Friedenwald	Medicine
Charles Getz	Medicine
Bernard S. Kleiman	Otolaryngology
John C. Krantz	Pharmacology & Experimental Therapeutics
Frank C. Marino	Surgery
Nicholas C. and Helen K. Mueller	Surgery
Maurice C. Pincoffs	Medicine
Joseph E. Smadel	Medicine
Henry J. Walton	Radiology
H. Leonard Warres	Radiology

# STUDENT LIFE

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## OFFICE OF STUDENT AFFAIRS

The Office of Student Affairs is designed to provide students enrolled in medicine with guidance, advice, help, and administrative services. In addition, the office is responsible for monitoring student progress and advancement, registration, graduation, and all aspects of student life related to undergraduate medical school. To this end, the office employs one full-time associate dean and one full-time assistant dean, three part-time assistant deans, two coordinators, and a clerical staff.

While the entire staff is available to help all students in any area, some members also assume a specialty area within their overall functions. These specialty areas include minority affairs, senior elective year advising, student fellowships, national intern and residency programs advising, counseling, administration of the students' Vertical Advisory System.

**Elective Program.** The Office of Student Affairs compiles course offerings, schedules courses and changes of electives, and provides for both evaluation of a student's performance during electives and evaluation of the electives taken.

**Office of Minority Affairs.** The office coordinates all activities concerned with the recruitment and retention of minority medical students. Some specific goals are to increase the number of minority students entering medical school and to provide all reasonable assistance necessary to facilitate their positive progress through the School of Medicine.

**Residency Advisory System.** The residency advisory system provides assistance in specialty career planning and guidance in the selection of suitable residency training programs. This service is available on an individual basis to all members of the junior and senior class.

**Vertical Advisory System.** Students have the opportunity for close personal association with a team of faculty advisors and upperclass students during each of the four years of medical school. This advisory system, administered through the Office of Student Affairs, provides a helpful, ongoing interchange concerning academic, social, personal, and career problems and opportunities.

**Financial Assistance.** Information regarding the types of aid available to medical students is detailed in the financial information section.

## HUMAN DIMENSIONS IN MEDICAL EDUCATION (HDME) PROGRAM

The HDME program provides opportunities for informal activities involving students and faculty outside the classroom setting. These range from social gatherings to serious small group discussions of concerns and feelings related to the personal and professional aspects of medical education and practice.

Students may elect to participate in the HDME Program at any point in their medical school career. Many enter the program by attending the prefreshman orientation retreat held in late August. The retreat is attended by students from all levels of training, faculty members and, in many cases, spouses or close friends. Participants are thus provided an opportunity to get acquainted in an informal, intimate, off-campus setting. Much of the time at the retreat is spent in intensive small group sessions. Topics of discussion are determined in each group, but typically cover such areas as adjustment to medical school, the impact of a medical career on domestic life, or the problem of setting priorities among various professional and personal commitments. Recreational activities are also included in the four-day experience.

Students in the HDME Program also participate in the Vertical Advisory System (see Office of Student Affairs), but are normally assigned faculty advisors within the HDME program.

HDME was conceived at The Center for the Studies of the Person in La Jolla, California, which advises on-site HDME Programs at a small number of selected medical schools across the country. The program is planned and operated locally by student-faculty committees. Some of its other activities include publishing a newsletter, training in group leadership and communication skills, and efforts to enhance interpersonal relationships in the clinical setting. The desired end result is the development of communication and listening skills which will

enable the medical student, house officer and faculty member to become better health care providers.

## STUDENT GOVERNMENT

**Committee on Student Activities.** At present, a standing committee of the School of Medicine Council charged with the continued study of the health and general welfare of the students in the areas of health and safety, ethics, and financial aid has been replaced by regular meetings involving the deans, class officers, Student Council president, and student members of the Curriculum Committee which serve to focus on these needs.

**Judicial Board.** The medical school community operates under a general statement of ethical principles which are subject to periodic review by a Judicial Board. This board is chaired by a faculty member appointed by the dean and is composed of elected representatives from the faculty, the student body, and the housestaff. The board investigates any alleged infractions of the ethical code and conducts appropriate hearings. It reports its findings and recommendations to the dean, who presents an impersonal report of the decisions to the School of Medicine Council.

**Student Council.** This organization is recognized by the administration of the School of Medicine as the official representative body of medical, medical technology and physical therapy students. All students of these professions become *de jure* members of the student body at registration upon payment of the student activities fee. The Student Council members are elected by the classes of the student body with one representative per 50 members (or fraction thereof), the first representative being the duly-elected president of the class.

Duties of the Student Council are as follows: (1) to disburse monies from the student activities fund according to the council's financial disbursement guidelines; (2) to organize and administer the intramural athletic program, and (3) to define areas of schoolwide interest and to coordinate support for related activities through policy guidance, funding and promotion.

Each year the Student Council sponsors an intramural program for medical, medical technology, physical therapy and radiologic technology students. The events usually consist of inter-class competition in touch football, basketball, softball and tennis. A ping-pong tournament and coed volley ball games are also regular events.

## STUDENT PUBLICATIONS

**Terrae Mariae Medicus.** The yearbook is published annually at the discretion of the medical school's senior class. Since 1896 the volume has provided a wide coverage of student life. The cost of the yearbook is included in the student activities fee.

**Aesclepian.** The student newspaper is sponsored by the Student Council. A student editor is paid by the sponsoring group to produce up to 18 issues a year.

## STUDENT ORGANIZATIONS

**American Medical Student Association.(AMSA).** The AMSA chapter at the University of Maryland School of Medicine is chartered as a member body of the national AMSA, an organization begun in 1951 to channel student activism into improving the delivery of health care in the United States. As such, its concerns encompass the entire spectrum of health issues, from manpower recruitment, education and utilization, to legislation and planning of innovative methods of raising the level of health care in the country. Membership is open to all medical, allied health professions and pre-med students on an affiliate basis. Nationally, AMSA offers students the opportunity to design, administer and participate in programs and projects which increase the student's awareness of the multiplicity of factors that determine "level of health." Locally, AMSA sponsors freshman orientation for the medical school, fosters social interaction among medical students and sends delegates to regional conferences and national conventions. Each year AMSA also selects the teaching faculty to receive the Golden Apple Award in recognition of their teaching excellence.



**Student National Medical Association (SNMA).** The University of Maryland SNMA chapter was organized in 1970 by the minority students in the medical school. The organization's general goals are aimed at alleviating the crisis of health care delivery in minority groups of the American population by increasing the enrollment and decreasing the attrition rate of minority students in medical schools. A very specific goal of the national organization is a program directed at the problem of sickle cell anemia. On campus, the local chapter gives a voice to problems facing minority students in medicine in general, and at this medical school in particular. The group also provides pertinent activities and functions for the well-being of its members.

**Family Practice Club.** In 1969, a group of medical students formed this organization to increase the awareness of the new specialty of family practice and to provide activities related to it. This is accomplished through the club's summer preceptorship program and its monthly meetings at which students interact socially with practicing family physicians in their discussion of topics of current interest in family medicine. The Maryland Academy of Family Physicians and the medical school's Department of Family Medicine are both very active in their support of the club's activities.

**Alpha Omega Alpha.** The Beta chapter of Maryland was established at the University of Maryland in 1949. Medical students possessing outstanding qualities of moral integrity, scholarship and leadership are elected to membership in their third or fourth years. The society sponsors an annual lectureship, a forum for the presentation of medical student research and chapter meetings on topics of social, educational and philosophical interest to medical students and faculty.

## MEDICAL ALUMNI ASSOCIATION

"The alumni of the School of Medicine of the University of Maryland desiring to further the interest and advancement of the University of Maryland School of Medicine and perpetuate the associations made during the medical school period..." With that preamble to its constitution, the Medical Alumni Association has, since 1895, served all graduates, students, faculty, staff and physicians affiliated with the School of Medicine.

The Medical Alumni Association office, located in Davidge Hall at 522 W. Lombard Street, is open from 8:30 a.m. to 4:30 p.m. and is staffed with full-time employees. Functions of the association include the maintenance of up-to-date addresses of all graduates, contact with the membership through regular mailings and coordination of Alumni Day activities, held in conjunction with graduation when five-year reunions are celebrated. The association also supervises the printing and distribution of the quarterly publication, the BULLETIN, which is mailed to all alumni, faculty and students.

An ongoing project assumed by the association is the plan to restore Davidge Hall to its original state as built in 1812. The building has been designated as a "National Historic Place" by the Department of the Interior. Donations totaling more than \$300,000 have been made by alumni and friends to convert Davidge Hall into a "living museum" — one which symbolizes the beginnings and continuity of higher education in the state of Maryland.

Recently the association's role in raising funds for the School of Medicine and its students provided assistance in many departments which would have otherwise been unfunded. Additionally, proceeds from the 1977-78 Annual Fund Drive enabled the School of Medicine to establish a daily medical care center for the elderly in the Inner Harbor area, which will also provide legal, dental, social work and nursing interdisciplinary services.

In addition to the annual fund campaigns for the school, the association was instrumental in obtaining a large student aid grant from an alumnus, a Chair in the School of Medicine and several lectureships. For many years, the Medical Alumni Association has offered interest-free loans to medical students. Recently, upon receipt of a large bequest of a 1921 alumnus, grants are now available from the Walter M. Winters' Fund, as administered by the Office of Student Financial Aid.



In order to promote a better line of communication among the students, school and association, a Wine and Cheese Party is held for the first and second year classes, an Oyster Roast is held for the third year students and, upon graduation, the Seniors are guests at the Annual Alumni Banquet. The Medical Alumni Association is totally self-supporting and all expenses incurred in its operation, alumni and student activities and publication of the BULLETIN are derived from membership dues.

All faculty and staff members affiliated with the School of Medicine and the University of Maryland Hospital are welcome and eligible for membership. For further information, write to the Medical Alumni Association of the University of Maryland, Inc., Room 201, Davidge Hall, 522 W. Lombard Street, Baltimore, Maryland 21201, or phone 301-528-7454.

## **STUDENT HEALTH SERVICE**

The School of Medicine provides medical care for its students through the Student Health Service located in Room 145, Howard Hall. The office is staffed by a physician-director, assistant director, three internists, two psychiatrists, a gynecologist, three registered nurses and two secretaries. The care provided is an office-type of practice for those with illnesses or injuries not requiring hospitalization, but prevent the student from attending classes.

All students are required to have Blue Cross hospitalization insurance or its equivalent and must produce proof of such membership at the time of registration. A special Blue Cross-Blue Shield student policy is available to all students enrolled in the medical school. Detailed information regarding its provisions may be obtained from the Student Health Service.

As a prerequisite of registration each student is required to have a physical examination, tuberculin skin test and chest x-ray as scheduled by the Student Health Service. Abnormalities found during examination are discussed with the student. All students must pass the physical examination before final acceptance can be granted.

Prospective students are advised to have any known physical defects corrected before entering the School of Medicine in order to avoid absences during the academic year. Adherence to preventive medicine programs conducted by the Health Service (i.e., tuberculin skin test and chest x-rays) is required of all students, and is a mandatory part of registration.

The Health Service does not treat chronic conditions contracted by students prior to admission or extend treatment to acute conditions developing in the period between academic years.

A student's spouse or other members of the family are not eligible for Health Service care. In this regard, however, the Family Practice Health Center is available to family members desiring health care.

All students who register are required to pay a health fee at the time of registration. This fee covers all visits to the Health Service during the school year. Any necessary diagnostic studies will be at the expense of the student unless the studies are covered under the Blue Cross-Blue Shield or equivalent insurance.

## **HOUSING**

The University of Maryland at Baltimore is predominately a commuter campus. Most students locate housing in Baltimore or commute from their homes elsewhere in the state. Limited on-campus accommodations are available at the Baltimore Union and Parsons Hall Residence for Women for full-time, single students during the academic year.

The Coordinator of Student Activities Office, Room 108 of the Baltimore Union, assists students in locating off-campus housing as well as managing the two on-campus facilities.

During the summer months, rooms in the Baltimore Union are offered on a space available basis to students, faculty, and staff who are affiliated with the UMAB campus. The summer accommodations are on the 3rd, 4th and 5th floors of the Baltimore Union. The residence hall rooms are supplied with basic furnishings: desk, chair, bed, desk lamp, and dresser. No private baths, televisions, or air-conditioning are available in the rooms.

Application forms for housing may be obtained by writing to the Director of Housing, 621 West Lombard Street, Baltimore, Md. 21201.

## PRIZES

**Summa, Magna and Cum Laude Awards.** Certificates of honor are presented to those candidates for graduation who, during their academic four years, have exhibited outstanding qualifications for the practice of medicine.

**The Dr. Wayne W. Babcock Prize.** Each year a prize is awarded to a graduating senior for outstanding work in surgery as a memorial to Dr. Babcock.

**The Balder Scholarship Award.** Each year a prize is awarded for outstanding academic achievement to a graduating senior.

**The Dr. J. Edmund Bradley Prize.** Each year a graduating senior who has performed with special excellence in pediatrics is awarded a prize in honor of Dr. Bradley.

**The Dr. Eugene B. Brody Award.** A graduating senior is awarded a check and a certificate for outstanding achievement in psychotherapy.

**The Louis, Ida and Samuel Cohen Award.** A scholarship is awarded annually to a member of the senior class and housestaff for recognition of superior scholarship, scientific knowledge in internal medicine, and human understanding and compassion for patients.

**The Dr. Francis Donaldson Prize for Excellence in Pathology.** A check and a certificate are awarded to a graduating senior who excelled in sophomore Pathology.

**Faculty Gold Medal.** Each year a medal is struck and presented to the graduating senior who exemplifies outstanding qualities of a physician, i.e., scholarship, compassion, problem-solving skills, as well as having shown interest in serving the University of Maryland School of Medicine.

**The Family Practice Program Award.** A plaque, a check and a certificate are awarded to a senior for excellence in training in the concept of family medicine.

**The Dr. Jacob E. Finesinger Prize.** A prize is given each year in honor of Dr. Finesinger, late professor and chairman of the Department of Psychiatry, to the member of the senior class selected by the faculty who has done outstanding work in psychiatry.

**The Dr. A. Bradley Gaither Memorial Prize.** A prize, given each year by Mrs. Gaither as a memorial to her husband, is awarded to the student in the senior class excelling in genitourinary surgery.

**The Dr. William Alexander Hammond Award.** A prize is awarded to a graduating senior who has performed with special excellence in neurology.

**The Dr. Leonard M. Hummel Memorial Award.** A gold medal and Certificate of Proficiency are awarded annually as a memorial to the late Dr. Hummel to the graduate, selected by the faculty, who has manifested outstanding qualifications in internal medicine.

**The Dr. Milton S. Sacks Memorial Award.** A prize is given in honor of Dr. Sacks, late professor of medicine and hematology, to the graduating senior selected by the faculty who has performed with special excellence in medicine and hematology.

**The Uhlenhuth Prize in Anatomy.** Each year a graduating senior is awarded a certificate and skull for outstanding work in Anatomy during freshman year.

**The UpJohn Special Achievement Award.** Each year a graduating senior who has performed with special excellence in Epidemiology and Preventive Medicine is awarded a check and an engraved plaque from the UpJohn Company.

**The Rudolf Virchow Prize.** This award, consisting of a check and a certificate, is given to a graduating senior who did outstanding research work in Pathology.





## **ACCREDITATION**

The University of Maryland is a member of the Association of American Colleges and is accredited by the Middle States Association of Colleges and Secondary Schools. The School of Medicine is accredited by the Liaison Committee on Medical Education, accrediting body for the Association of American Medical Colleges and the American Medical Association.

## **SALARY AND EMPLOYMENT INFORMATION**

Students admitted to the University of Maryland School of Medicine can be assured of remunerative employment after satisfactory completion of the course of study and receipt of the degree, Doctor of Medicine. A high percentage of graduates enter the practice of medicine after completion of residency training. There appears to be a moderate excess of physicians in some disciplines of medicine and in some geographic areas. However, the overall need for persons holding the MD degree is such that all graduates of the School of Medicine may expect a satisfactory income.

## **EQUAL OPPORTUNITY**

The University of Maryland, in all its branches and divisions, subscribes to a policy of equal education opportunity for men and women of all races, creeds, and ethnic origins. The school has the objective of securing a broad racial, sexual and ethnic balance in its enrollment. To achieve this objective it desires to give every consideration to minority student applications.

## **APPLICATION**

The University of Maryland School of Medicine participates with the American Medical College Application Service (AMCAS) and all requests for a place in the first year class must be initiated by an AMCAS application. AMCAS application request cards can be obtained from AMCAS, Suite 310, 1776 Massachusetts Ave., NW, Washington, D.C. 20036, and the Committee on Admissions, University of Maryland School of Medicine, 655 West Baltimore St., Baltimore, Md. 21201. In addition, they are usually available from the premedical advisory office at the undergraduate college. AMCAS application material is usually ready for distribution about mid-June of the year prior to the year the applicant wishes to enter medical school.

For the School of Medicine, the AMCAS application is the first of a two-stage application process. The Committee on Admissions thoroughly reviews the AMCAS application and based on the information contained in it determines whether the second stage (School of Medicine) application form can be sent. An application fee to the School of Medicine is due only with the filing of the second stage application form. Every applicant will either be sent second stage application material or be informed that the committee cannot continue the application process.

It is very definitely in the best interests of the applicant that he file the application form and supporting credentials early in the application period. Please do not have supporting credentials sent prior to filing a final application.

It is the responsibility of the applicant to see that all required credentials and the completed application packet are filed with and received by the Committee on Admissions.

## **APPLICANT SELECTION**

Academic achievement, extracurricular activities, personal characteristics, recommendations from college instructors or the premedical committee, scores on the Medical College Admissions Test (MCAT) and personal interview are all carefully considered in evaluating an applicant. Academic achievement and or high scores on MCAT do not in themselves ensure acceptance. Of equal concern to the Committee on Admissions are the applicant's personality, character, motivation, sincerity of purpose and an assessment of the applicant's potential to perform as a medical student and as a future physician. Communications skills, honesty,

integrity, acceptance and carrying out of responsibility and involvement in activities in the area(s) of the applicant's interest(s) must also be demonstrated.

Matriculants are required to accept the provisions of the Judicial Board and agree to assume its obligations prior to registration.

Applications from persons with outstanding credentials from other areas of the United States and Canada are welcome and will receive all possible consideration. However, preference in the selection process is given to residents of the state of Maryland. Because of the large number of persons applying, applications can be processed only from citizens of the United States or Canada. A permanent alien immigrant is considered as being a citizen for selection purposes.

## ADMISSION TO FIRST YEAR

Careful attention should be given to choice of undergraduate electives, especially in the sciences. Usually the student should plan a four-year curriculum with a suitable arts and science major leading to a bachelor's degree. A major in an area other than science is quite acceptable although it is not our intention to divert students from a science major if this is their field of choice. The opportunity to place out of biochemistry by written examination is offered.

Applicants who choose a non-science major should take a sequence of science courses which demonstrate their academic ability to handle the demands made by a science-oriented curriculum.

A minimum of 90 semester hours of acceptable college credit is required, exclusive of physical education and military science, earned in colleges of arts and sciences whose names appear on the current list of "Accredited Institutions of Higher Education" as compiled by the National Committee of Regional Accrediting Agencies of the United States. Applicants who will have earned a bachelor's degree in arts and sciences from an approved college or university before registration for medical school will be given preference over applicants who have not completed the requirements for the bachelor's degree. The only courses accepted are those which are approved for credit towards a degree by the university or college attended as well as the University of Maryland.

The following college courses and credits, at an acceptable level, are required before registering for medical school:

	Semester Hours
General biology or zoology	8
Inorganic chemistry	8
Organic chemistry	6
General physics	8
English	6

No more than 60 hours can be accepted from accredited junior colleges and then, only if these credits are validated by a college offering a Bachelor of Arts or Science degree.

A letter of evaluation is required from the undergraduate premedical committee for those applicants still enrolled in or recently graduated from undergraduate college. If there is no premedical committee, letters are requested from two science and one non-science course instructors. When letters from other sources are sent, they should be only from persons who can candidly and critically evaluate the applicant's accomplishments, productivity and character. Consequently, such letters are usually from individuals who have supervised the applicant in some special experience in the applicant's area of interest or work. In any case, all letters of evaluation should be sent directly to the Committee on Admissions; they are *not* to be sent to AMCAS.

An evaluation of the applicant's credentials is made by members of the Committee on Admissions to determine if an interview is to be requested. This decision is based upon a composite estimate of the applicant's ability and future promise in the field of medicine as measured by

his academic record to date, performance on the MCAT, recommendations of the premedical faculty, extracurricular activities, an assessment of the applicant's personal characteristics and the applicant's overall standing as compared to that of the other applicants applying that year. Such interviews must be scheduled in advance at the initiative of the committee.

The MCAT is usually taken in the spring and must be taken no later than the fall of the year preceding the year of entrance. Applicants should write to the American College Testing Program, P.O. Box 414, Iowa City, Iowa, 52240, for further information and registration forms, or to the Committee on Admissions.

In the selection process, the Committee on Admissions must use as the applicant's residency status that which is in effect on the last day applications can be received (December 31).

For further information regarding the admissions process in general, the applicant is referred to a booklet entitled "Medical School Admissions Requirements" which can be obtained from the Association of American Medical Colleges, Suite 200, One DuPont Circle, NW, Washington, D.C. 20036, at a cost of \$4.

## **ADVANCED STANDING**

Students who have attended medical schools in the United States are eligible to file application for admission to the second and third year classes only. Application must be made no later than March 1 of the year of desired admission. Applicants for advanced standing must meet the current first year entrance requirements in addition to presenting acceptable medical school credentials and a medical school record based on courses which are equivalent to similar courses in this school.

No student can be considered who has been dismissed from any medical school unless his former dean submits a letter addressed to the Committee on Admissions stating that the student is reinstated in good standing and eligible for promotion. No student can be considered who is not eligible for promotion at the time of transfer.

Persons who already hold the degree of Doctor of Medicine cannot be admitted to the medical school as a candidate for that degree from this university.

The School of Medicine cooperates with the Coordinated Transfer Application System (COTRANS) of the Association of American Medical Colleges. Further information about COTRANS can be obtained by writing: COTRANS, Suite 301, Association of American Medical Colleges, 1776 Massachusetts Ave., NW, Washington, D.C. 20036. All applicants who wish to apply to the School of Medicine for advanced standing on the basis of academic work completed at a medical school outside the United States or Canada, must do so through the COTRANS procedure. Such applications can be considered only for advanced standing into the third year. In addition to satisfying all eligibility requirements of COTRANS, the applicant must successfully complete Part 1, National Board of Medical Examiners. To apply under the COTRANS procedure, the applicant must register with COTRANS and also submit an application form for advanced standing to the School of Medicine by March 1. It should be noted that strong preference is given to applicants who are residents of Maryland.

## **GENERAL RULES**

The university authorities reserve the right to make changes in the curriculum, the requirements for advancement and graduation, fees, and rules and regulations whenever appropriate.

Students who report for classes later than one week after the scheduled time will be permitted to begin work only by permission of the dean. Attendance at all scheduled classes is expected.

Notice of change of address should be submitted promptly to the Dean's Office and to the Registrar's Office.

All new students, whether they are admitted to the first year class or with advanced standing, are expected to attend an orientation for new students.



## DISCLOSURE OF STUDENT INFORMATION

In accordance with "The Family Education Rights and Privacy Acts of 1974" (PL 93-380), popularly referred to as the "Buckley Amendment," disclosure of student information, including financial and academic, is restricted. Release to anyone other than the student requires a written waiver from the student. A full policy statement may be found in the current UMAB campus information guide issued to all incoming students.

## DETERMINATION OF IN-STATE STATUS

An initial determination of in-state status for admission, tuition, and charge-differential purposes will be made by the University at the time a student's application for admission is under consideration. The determination made at that time, and any determination thereafter, shall prevail in each semester until the determination is successfully challenged prior to the last day available for registration for the forthcoming semester. A determination regarding in-state status may be changed for any subsequent semester if circumstances warrant redetermination.

In those instances where an entering class size is established and where an application deadline is stated, in-state conditions for admissions must be satisfied as of the announced closing application date.

Petitions for review of eligibility and questions concerning the University policy should be directed to the Office of Admissions and Registrations, Howard Hall, Room 132, University of Maryland at Baltimore, Baltimore, Maryland 21201.

Students classified as in-state for admission, tuition and charge-differential purposes are responsible for notifying the Office of Admissions and Registrations, in writing, within fifteen (15) days of any change of circumstances which might affect their classification at the Baltimore City Campus.

A complete policy statement may be obtained from the Committee on Admissions or the Office of Admissions and Registrations.



## TUITION AND FEES FOR 1979-1980

	Fall	Spring	Total
Application Fee/Matriculation Fee *	\$ 15.00		\$ 15.00
Fixed Charges — In-State	1,250.00	1,250.00	2,500.00
Fixed Charges — Out-of-State	2,500.00	2,500.00	5,000.00
Instructional Resources Fee	16.00	16.00	32.00
Student Activities Fee	15.00	15.00	30.00
Student Health Fee	10.00	10.00	20.00
Hospital Insurance (Individual) **	105.96	105.96	211.92
Student Liability Insurance ***	75.00		75.00
Supporting Facilities Fee	30.00	30.00	60.00
Dormitory Fee ****	442.50	442.50	885.00
Graduation Fee — Seniors		15.00	15.00

\*An application fee of \$15 should be submitted with the formal application to the School of Medicine. This fee will be applied against the matriculation fee for accepted students. A deposit on tuition of \$50 is required of all applicants before the expiration date specified in the offer of acceptance. The deposit will be credited against first semester charges. In the event of withdrawal before registration, the advanced deposit will be returned on request, if made before March 1.

\*\*Hospital insurance is required of all full-time students. A brief outline of the student health insurance program is furnished each student. Students with equivalent insurance coverage must provide proof of such coverage at the time of registration and obtain a hospital insurance waiver. Rates are subject to change.

\*\*\*Student liability (malpractice) insurance is required of all students.

\*\*\*\*Rate based on 10 month year. Transient rates available for summer. Dormitory fee for 1979-1980 not determined at time of publication.

## FEES

**Application and/or matriculation fee** partially defrays the cost of processing applications for admission and enrollment data in the professional schools. These fees are not refundable.

**Student health fee** is charged to help defray the cost of providing a Student Health Service which includes routine examinations and emergency care. Acceptable medical insurance is required in addition to the student health fee.

**Diploma fee** is charged to help defray costs involved with graduation and commencement.

**Instructional resources fee** is charged to provide supplies, materials, equipment and other costs directly associated with the instructional program.

**Student activities fee** is used to meet the costs of various student activities, student publications and cultural programs. The Student Government Association, in cooperation with the Dean's Office, recommends expenditure of the fee collected.

**Supporting facilities fee** is used for expansion of various facilities on campus that are not funded or are funded only in part from other sources.

**Fixed charges fee** meets a portion of the costs for the educational program and supporting services.

**Service charge** is assessed for dishonored checks and is payable for each which is returned unpaid by the drawee bank on initial presentation because of insufficient funds, payment stopped, postdating, or drawn against uncollected items.

For checks up to \$50 — \$5  
For checks from \$50.01 to \$100 — \$10  
For checks over \$100 — \$20

**Late registration fee** defrays the cost of special handling involved for those who do not complete their registration on the prescribed days.

No diploma, certificate, or transcript will be issued to a student until all financial obligations to the university have been satisfied.

The university reserves the right to make such changes in fees and other charges as may be necessary.

## REGISTRATION

To attend classes at the UMAB campus it is necessary to process an official registration. All students are required to register each term in accordance with current registration procedures. Fees are due and payable on the dates specified for registration. Registration is not completed until all financial obligations are satisfied. Students who do not complete their registration, including the payment of their bill on the registration days, will be subject to a late registration fee.

Courses taken concurrently with a UMAB registration at another campus or institution must have program approval in advance by the appropriate UMAB officials. Off-campus registration forms are available in each dean's office and the Registrar's Office.

Although the university regularly mails bills to preregistered students, it cannot assume responsibility of their receipt. If any student does not receive a bill prior to the beginning of a semester in which he/she has preregistered, it is his/her responsibility to contact the Office of the Registrar or Office of the Cashier, Howard Hall, during normal business hours.

Students who arena register or preregister and subsequently decide not to attend UMAB must notify the Registrar's Office, Howard Hall, Room 135, in writing, prior to the first day of classes. If this office has not received a request for cancellation by 4:30 p.m. of the last day before classes begin, the university will assume the student plans to attend and accepts his or her financial obligation.

After classes begin, students who wish to terminate their registration must submit an application for withdrawal to the Registrar's Office. Students are liable for all charges applicable at the time of the withdrawal. All checks and money orders should be made payable to the University of Maryland for the exact amount of the actual bill.

Any enrolled student may request at registration the postponement of payment of one-half his/her fixed charges for thirty (30) days; all other fees are due and payable. For this service a charge of \$2.00 will be made.

If a satisfactory settlement or agreement for settlement is not made with the Business Office within ten days after a payment is due, the student automatically is debarred from attendance at classes and will forfeit the other privileges of the School of Medicine.

## WITHDRAWAL AND REFUNDS

Students desiring to leave the School of Medicine at any time during the academic year are required to file a letter of resignation with the dean. In addition, an Application For Withdrawal Form bearing the proper signatures must be filed with the Office of the Registrar. The student must satisfy the authorities that he has no outstanding obligations to the school and return his student identification card.

If the above procedures are not completed, the student will not be entitled to honorable dismissal and will forfeit the right to any refunds to which he would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is signed by the dean.



**Academic Standing.** Students who voluntarily withdraw during an academic semester will be given no credit. Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded at the Registrar's Office. Students who withdraw from the medical school and later desire readmission must apply to the Committee on Admissions unless other arrangements have been consummated with the dean's written consent.

**Refunds.** Students officially withdrawing from the school will be credited for all academic fees charged to them less the matriculation fee, in accordance with the following schedule from the date instruction begins:

Two weeks or less	80 per cent
Between two and three weeks	60 per cent
Between three and four weeks	40 per cent
Between four and five weeks	20 per cent
After five weeks	0 per cent

**Leaves of Absence.** Students who are in good standing may be granted one year's leave of absence on request of the dean. Longer leaves can be arranged only under special circumstances with the exception of those students in the combined MD-PhD program.

## REQUIRED EQUIPMENT

**Dissecting Instruments.** At the beginning of the first year, all freshmen must possess a complete set of dissecting instruments similar to the ones on display in the bookstore.

**Microscopes.** All freshmen must also provide themselves with a standard microscope. All microscopes must conform to the following specifications:

1. For frequent and prolonged use, a binocular microscope is preferable to a monocular-type instrument and is therefore strongly recommended.
2. 10X oculars; wide field oculars are recommended, but not required.
3. Quadruple nose piece.
4. Four parfocal objective lenses, viz.—  
30 mm., 4X, 0.1 N.A.  
16 mm., 10X, 0.25 N.A.  
4 mm., 43X, 0.65 N.A.  
1.8 mm., 97X, oil immersion, 1.25 N.A.
5. Mechanical stage to accommodate standard size microscopic slides; the stage need not be graduated.
6. Built-in, on-base light source; a variable transformer is recommended.
7. Substage condenser; Abbe or variable focus.
8. A carrying case is recommended.

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some of the older instruments are in poor optical or mechanical condition; and, in addition, some are equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard hemocytometer cover glass without breakage.

Based on the determination of financial need, first year medical students may qualify for loan of a microscope.

**Other Equipment.** By the second year, medical students are required to have an ophthalmoscope, a blood pressure cuff, hemocytometer, and slit lamp. The estimated cost of these items, plus other essentials such as lab coats, is \$150 to \$200.

## FINANCIAL ASSISTANCE

The University of Maryland School of Medicine's financial aid program is available for medical students who demonstrate financial need. Through a varying combination of grants, scholarships, long and short term loans, and part-time employment, students may receive assistance in meeting educational expenses. In addition to the school resources, outside funding agencies make financial assistance available to qualified medical students.

An application for financial aid must be submitted annually, no later than February 15 to be considered for assistance for the following academic year. Applications of entering students will be considered only after the applicant has been accepted for admission. Entering students will be forwarded financial aid applications upon request to either the Committee on Admissions or to the Student Aid Office. Students currently enrolled in the School of Medicine may obtain forms from the Student Aid Office.

The amount of student assistance is determined on the basis of demonstrated financial need. Eligibility for financial aid is dependent upon the student maintaining good academic standing and full-time attendance. When determining the amount to be awarded, the financial aid committee considers the following: 1) the income, assets, and resources of the student and student's family; 2) support available to the student from non-university sources; 3) the costs reasonably necessary for full-time attendance at the school.

Renewal of financial aid for succeeding years is dependent upon annual submission and review of a financial aid application, good academic standing, the student's continued financial need, and the availability of funds.

A complete description of the procedures used to evaluate applications for aid, of the student budgets used, and of various university, state and federal programs, can be found in the brochure "Financial Aid at UMAB."

## **MEDICAL SCHOOL FUNDS**

**Maryland State Grants.** Grants are made to disadvantaged students who are residents of Maryland with priority consideration to minority disadvantaged students.

**Dean's Scholarship.** Funds provided by each school are awarded primarily to non-resident students although Maryland residents may also participate in the program.

**Desegregation Grants.** First-year minority students who are Maryland residents are eligible for these funds. Desegregation grants will normally be used to reduce the amount of loan included in the financial aid award. Continuation of these grants past the first year will vary by school.

**Health Professions Loan.** Medical, dental and pharmacy students are eligible for loans equal to tuition and fees plus \$2500 annually. Interest accrual at 7% and principal payments are deferred until one year after graduation at which time both interest and principal payments begin. Both interest and principal may also be deferred for internships and residencies and for up to three years of service in the uniformed services (including National Health Service Corps) and the Peace Corps. The federal government will repay 60% of the outstanding principal and interest for a minimum of two years of service in a designated shortage area; an additional 25% will be repaid for a third year of service.

**Medical Alumni Association.** Interest-free loans are available.

**Robert Wood Johnson Loan.** Medical and dental students may participate in this loan program. Interest is currently set at 10% and must be paid while the borrower is in school. Because the interest must be paid in advance on the full amount of the loan from the time of disbursement to a date three months after graduation, the effective interest rate for a first year student is 11.6%. Interest payments are again due three months after graduation, but principal repayments may be deferred for up to three years of residency training. The entire loan is cancelled if the borrower does not finish the degree program.

**Work Study.** The College Work-Study Program provides jobs for students who need financial aid and who must earn a part of their educational expenses. Jobs are arranged either on-campus or off-campus with a public or private nonprofit agency. If you are found to be eligible, you may be employed for as many as 20 hours per week.

**Private and Endowment Funds.** From bequests and private donations, the School of Medicine has established private and endowment accounts to provide fellowships, scholarships, and loans for students on the basis of their academic achievement and financial need. The amounts of these fellowships, scholarships, and loans vary and are awarded on an annual basis in accordance with school policy.

The availability of support from each of the funds listed below is dependent upon the income generated. In addition, since many of the funds are governed by specific provisions set forth by the donors, awards must be made accordingly.

Avalon Foundation Scholarship  
Balder Scholarship Fund  
Robert W. Buxton Scholarship  
Israel and Cecelia E. Cohen Scholarship  
William H. Crim Scholarship  
A. Lee Ellis Scholarship  
Arthur Wright Erskine Scholarship  
John E. Esnard Fund  
Edward G. Field Memorial Fund  
Sharon Fox Scholarship  
Leon Frank Scholarship  
Laurence Gale Memorial Scholarship  
Joseph B. Ganey Scholarship  
Harry Gudelsky Fund  
Horace Bruce Hetrick Scholarship  
Margaret A. Hicks Scholarship  
Hitchcock (Charles H. and Charles M.) Scholarships  
G. D. Jackson Scholarship  
W. Alton Jones Scholarship  
Leo Karlinsky Scholarship  
Emmett and Ruth Light Scholarship  
Alex J. and Clara Maysels Scholarship  
Arthur C. Palmateer Memorial Scholarship  
Henry Rolando Scholarship Fund  
Morton and Elaine Schwartz Scholarship  
David Street Memorial Scholarship  
Charles R. Thomas Scholarship  
Arnold Tramer Scholarship Fund  
Michael Vinciquerra Scholarship  
Clarence Geneva Warfield Scholarship  
John F. B. Weaver Scholarship  
John L. Whitehurst Fund  
Sara A. Whitehurst Fund  
Randolph Winslow Scholarship  
Walter M. Winters Scholarship  
Henry Zoller, Jr. Scholarship  
Balder Loan Fund  
Jay W. Eaton Loan Fund  
Foundation Loan Fund Class of 1934  
Gold-Steinberg Memorial Loan Fund  
Issac Gutman Loan Fund  
W. K. Kellogg Loan Fund  
William and Sarah Kraut Loan Fund  
Michael H. Lipman Loan Fund  
Joseph Lipskey Loan Fund  
Marie K. Manger Loan Fund  
Frank C. Marino Loan Fund  
Medical School Council Loan Fund  
Edward and Lina Meirhof Loan Fund  
Memorial Loan Fund School of Medicine, Class of 1916  
Jessie Smith Noyes Loan Fund  
Charles Pfizer Loan Fund  
Senior Class Loan Fund



Senior Class of 1945 Loan Fund  
Christopher C. Shaw Class of 1931 Loan Fund  
Hugh R. Spencer Loan Fund  
Webster M. Strayer Loan Fund  
Wetherbee Fort Loan Fund  
Women's Auxiliary of Montgomery County Loan Fund

## OUTSIDE SOURCES

Students are encouraged to consider financial aid resources available through sources outside of the School of Medicine. Each of the following programs requires a separate application; while application deadlines vary, most are in early Spring.

**Maryland State Scholarship Board: Professional School Scholarships.** These one-year grants of \$200-\$1,000 must be used in one of the eligible professional schools (medicine, dentistry, pharmacy, nursing, law), and awards can be sought for subsequent years by proper reapplication.

**Maryland State Scholarship Board: Family Practice-Medical Scholarships.** These awards are for students enrolled in the School of Medicine of the University of Maryland and pursuing a Doctor of Medicine degree. A recipient must have been a Maryland resident for five years, have definite financial need, and be willing to enter the general practice of medicine, serving the state of Maryland in an area of need (bond required). These \$1,500 per year awards continue for up to four years, and no renewal application is required.

**National Health Service Corps.** For each academic year of training a National Health Service Corps Scholarship Program award for medical and dental students consists of: (a) a monthly stipend for living expenses of at least \$453 a month during the 12-month school year, with annual adjustments to reflect any increases in federal salaries; (b) payment to the school of the tuition and fees; (c) payment of other educational expenses to cover books, supplies, equipment, etc., based upon the average, expenses of students in your school and class year.

Students who receive these scholarships can generally expect continued scholarship support through their senior year (up to a maximum of four years) provided that funds continue to be available.

For each year of scholarship support, recipients are required to perform a year of full-time clinical practice in a designated health manpower shortage area. Practitioners are assigned as salaried, federal employees by the National Health Service Corps and must serve a minimum of two years.

For further information and applications, call 24-hour toll-free phone (800) 638-0824 (except from D.C., Maryland, Alaska, Hawaii and U.S. Commonwealths or Possessions); for local calls during office hours, (301) 436-6453. Or write to: National Health Service Corps Scholarship Program, Center Building, Room 5-44, 3700 East-West Highway, Hyattsville, Maryland 20782.

**National Medical Fellowships.** Need-based awards to minority medical students. For further information and applications write: National Medical Fellowships, 250 West 57th Street, New York, NY 10019.

**Maryland Higher Education Loan.** The guaranteed student loan program is a nation-wide program known by different names in different states: guaranteed loans, federally insured loans, Maryland Higher Education loans, etc. They are all part of the same program, one which enables you to borrow directly from a bank, credit union, savings and loan association or other participating lender which is willing to make the loan. The loan is guaranteed by a state or private nonprofit agency or insured by the federal government.

The maximum you may borrow as an undergraduate is \$2,500 a year. A graduate or professional student may borrow up to \$5,000 a year (in some states these amounts may be less). The interest rate on these loans is 7%.

The total amount outstanding that you may borrow for undergraduate study is \$7,500. The

total amount outstanding for graduate or professional study is \$15,000, including loans made at the undergraduate level.

All students are eligible for federal interest benefits.

An insurance premium of up to one percent each year of the total loan outstanding may be collected in advance under a state or private guarantee agency program. An insurance premium of one-quarter of one percent will be collected for loans insured by the federal government. Usually this premium is collected at the time of disbursement by the lender.

The loan must be repaid. Payments normally begin between 9 to 12 months after you graduate or leave school, and you may be allowed to take up to 10 years to repay the loan. The amount of your payments depends upon the size of your debt and your ability to pay; but in most cases you must pay at least \$360 a year unless the lender agrees to a lesser amount.

You do not have to make payments for up to three years while you serve in the Armed Forces, Peace Corps, or full-time volunteer programs conducted by ACTION. In addition, deferment is available any time you return to full-time study at an eligible institution or pursue a course of study under a graduate fellowship program approved by the Commissioner of Education. A single deferment for a period of not more than one year is also provided for students who are unable to find full-time employment.

**Health Education Assistance Loan.** Pharmacy students who have completed three years of training and all medical and dental students may borrow from the HEAL program. U.S. citizens who are full-time students in one of these programs may borrow up to \$10,000 per year (pharmacy, \$7,500) to a cumulative maximum of \$50,000 (pharmacy, \$37,500).

The loans are made by commercial lenders. Students may not borrow from another guaranteed student loan program (such as the Maryland Higher Education loan) during the same academic year to be covered by the Health Education Assistance Loan.

There is no federal interest subsidy under this program. Interest may not exceed 12% per annum (ANNUAL PERCENTAGE RATE) of the unpaid balance of the loan. Interest may be paid on an ongoing basis or accrued until repayment begins. If interest is accrued, it will be compounded semi-annually and added to the loan principal when repayment begins. An insurance premium, not to exceed 2% per annum, will be charged at the time an individual loan is processed.

Repayment will begin 9 to 12 months after all formal training, including that provided in accredited internship and residency programs, has been completed. A deferment of principal will be granted to borrowers who return to full-time study at an institution of higher education, or, for up to three years, for training in an internship or residency program, or service in the Armed Forces, Peace Corps, or specified programs under ACTION or the National Health Service Corps after the repayment period has commenced. Borrowers may take from 10 to 15 years to repay the loan once repayment commences.

Borrowers may apply for federal payment of both principal and interest to a maximum of \$10,000 a year through service in the National Health Service Corps or practice in a health manpower shortage area. This federal payment for service will be at the option of the federal government and available only to the extent that vacancies exist in the National Health Service Corps or if there are shortage areas in the academic discipline for which the borrower obtained his/her training.

Repayment will be carefully monitored. Under law, there will be no discharge of loans by bankruptcy during the first five years of the designated 10-15 year repayment period. Persons in professional practice who default on their loans may have payments for any federally supported health care service, such as Medicare and Medicaid, reduced by the amount of the loan default. If a borrower breaches obligations entered into under a federal payment for service contract, the United States government will be entitled to recover damages.

**American Medical Association Loan.** Medical students may borrow up to \$1,500 per year from the AMA. Interest accrues at 8% annually and must be paid while the borrower is in school.

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## PROGRAMS OF STUDY

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## CURRICULUM

Broadly stated, the educational objectives of the School of Medicine are as follows:

- To educate students in a manner which will enable them to function at a high level of professional expertise and social awareness on a broad base of medical competency.
- To introduce the medical student to the concept of primary care of patients and to provide the medical student with sufficient opportunities to develop knowledge and skills for the delivery of primary care to the patient population.
- To provide opportunities for students at every level of training to pursue areas of special interest in depth, whether for intellectual stimulation or furtherance of a career choice.
- To encourage students to seek future medical careers in areas of need, whether these be professional or geographic.
- To train a variety of individuals to form the core of highly competent professionals who will practice medicine as generalists or specialists, teach full or part-time, or continue to add to knowledge through research.

More specifically, the curriculum has been designed to meet medical educational contingencies as they arise. To this end, the faculty has established as a basic principle, continuous curricular review and has empaneled a standing Committee on Curriculum Coordination which is composed of year I, year II, and clinical year faculty chairpersons, special course chairpersons, faculty members-at-large, and representatives of the student body. This committee is charged with the responsibility of monitoring the curriculum and recommending changes whenever they are deemed necessary. The curriculum varies from year to year to meet changing needs of graduate medical education and health care delivery.

Potential students are advised that although the current curriculum is based on a five-day week class structure, there is a strong possibility that future curriculum developments may necessitate a five-and-one-half-day (Saturday mornings) structure of compulsory attendance during any of the four years of medical education. Additionally, it should be noted that the current clinical curriculum frequently involves weekend attendance and that a weekend session dealing with the topic intimate human behavior is included in the year I curriculum. Furthermore, students should be prepared to spend a block of time in training sites out of the metropolitan Baltimore area during their stay in medical school.

**First and Second Years.** Recent curricular change has resulted in two four-month core sessions in each of the first and second years. During the months of January and June, elective courses will be taught with a minimum requirement of eight elective freshman/sophomore courses to be achieved by medical students prior to advancement into the third year. These elective courses may be taken during any one of the four minimesters at the student's and advisor's discretion.

During the freshman year, the following core courses are taught: Anatomy (including gross anatomy and histology), Biochemistry, Epidemiology and Preventive Medicine, Psychiatry, Physiology and Biophysics (combined), Genetics (interdisciplinary), and Neurosciences. In addition, students are exposed to a variety of subjects such as interviewing techniques, emergency medical care, normal physical diagnosis, and specialty physical diagnosis through the freshman year interdisciplinary course, Introduction to Clinical Practice. Correlative Medicine, an interdisciplinary course, attempts to stress the clinical aspect of the basic sciences and is taught in the freshman and sophomore years. Intimate Human Behavior, an interprofessional course under the aegis of the Interprofessional Studies Committee, is required of freshmen medical students and is open to students from the other professional schools on campus.

During the sophomore year, students encounter the following core courses: Microbiology, Pathology, Pharmacology and Experimental Therapeutics, Physical Diagnosis, Psychiatry, and Epidemiology and Preventive Medicine. Introduction to Clinical Practice is continued in the sophomore year including courses in specialty physical diagnosis and medical ethics. Fur-

thermore, there is a continued emphasis throughout the year on clinical correlation with combined instruction by basic science and clinical science faculty. This correlative teaching involves faculty of all the basic science departments in cooperation with the clinical scientists in order to provide the sophomore medical student with the full spectrum of the basic science foundation and the clinical science presentation of disease states. Attendance in all small group experiences, including laboratories and discussion groups, is mandatory.

**Third and Fourth Years.** A new clinical years curriculum has been instituted. This curriculum requires the student to spend a minimum of one summer between the sophomore and junior or junior and senior year taking clinical science courses at the University of Maryland School of Medicine. The two clinical years are viewed as a total unit with progressive patient responsibility on the part of the student. The first clinical experience consists of four 12-week rotations which are as follows: internal medicine; surgery; pediatrics and psychiatry; obstetrics/gynecology, radiology, and neurology. The student will take these four 12-week quarters according to a specific individual schedule. Course order for individual students will be based on logistical sequencing. The sum of these quarters provides a 48-week background introduction to clinical science.

Following this experience, the student will have a 24-week block that includes an eight-week elective period in which the student may pick one or two electives of his/her own choice. An additional eight weeks will be spent in a student internship in one of four clinical fields: medicine, surgery, pediatrics, or family practice. Here the student will be given an opportunity for primary patient care responsibility over a prolonged period of time. This rotation will generally be given at the University of Maryland Hospital or, on occasion, at an approved affiliate. The third two-month segment will be a consecutive eight-week experience in an ambulatory setting. These out-patient settings will include internal medicine, pediatrics, and family practice, with emphasis on epidemiology and preventive medicine, and rehabilitation medicine. Attendance in all course work in clinical areas is mandatory. In the additional free time, the student may audit available electives. The combined clinical years program equals the usual 72-week combination of the final two years but supplements the strong background of clinical science with a definitive opportunity for primary responsibility during the subsequent clinical experiences. It is hoped that this curricular change will better prepare the medical student for the increasing responsibility demanded by the new specialty residency programs which have been adopted throughout the country.





## GRADES AND PROMOTION

Official grades are designated by the following symbols:

- H — Honors, completion of the course with exceptional performance
- P — Satisfactory completion of a course
- C — A nonpassing grade which must be remediated before advancement
- F — Failure

When circumstances beyond a student's control make it impossible for him to complete a course at a usual time, he will be given an incomplete (I) until such time as he has completed the course. An "I" is in no way prejudicial to the final rating or grade of the student in the course.

Periodically throughout the academic year, the Advancement Committee convenes to review the records of all students in each class. The estimate of a student's academic status is based on academic achievement, his moral and ethical traits and general evaluation of his fitness for a career in medicine.

Students who repeat a year and who do not show significant improvement in all courses may, at the discretion of the Advancement Committee, be dismissed. All "F" grades must be absolved prior to graduation. Established rules for advancement and dismissal have been adopted by the faculty and student body representatives of the School of Medicine Council.

Students who repeat a year and who do not show significant improvement in all courses may, at the discretion of the Advancement Committee, be dismissed. All "F" grades must be absolved prior to graduation. Established rules for advancement and dismissal have been adopted by the faculty and student body representatives of the School of Medicine Council.

The faculty reserves the right to determine if a student may withdraw, repeat, advance or graduate on academic or moral and personal grounds, including traits of character.

All discretionary actions of the Advancement Committee are subject to ratification by the School of Medicine Council and must be presented to this body at its next meeting. Student appeals mechanisms have been officially adopted and implemented when necessary.





## RESIDENCIES AND FELLOWSHIPS

Graduate specialty programs for residents and fellows at the University of Maryland Hospital are approved by the Council on Medical Education of the American Medical Association and in Dentistry by the American Dental Association.

The approved first-year resident (G-1) positions are filled through the National Internship and Residency Matching Program. Included are categorical (rotating and straight) residencies in anesthesiology, family medicine, medicine, neurology, obstetrics-gynecology, pathology, pediatrics, rehabilitation medicine, and surgery. Approximately 480 resident and fellowship positions, 110 of which are for first-year residents, are available in the following specialty areas:

*Department of Anesthesiology:* anesthesiology

*Department of Dentistry:* oral surgery and general practice dentistry

*Department of Family Medicine:* family medicine

*Department of Medicine:* cardiology, dermatology, endocrinology, gastroenterology, infectious disease, internal medicine, nuclear medicine, and renology

*Department of Neurology:* neurology

*Department of Obstetrics and Gynecology:* obstetrics-gynecology

*Department of Ophthalmology:* ophthalmology

*Department of Pathology:* clinical and anatomical pathology

*Department of Pediatrics:* pediatrics and pediatric allergy

*Primary Care Program:* internal medicine and pediatrics

*Department of Psychiatry:* psychiatry and child psychiatry

*Department of Radiation Therapy:* radiation therapy

*Department of Radiology:* radiology

*Department of Rehabilitation Medicine:* rehabilitation medicine

*Department of Epidemiology and Preventive Medicine:* preventive medicine

*Department of Surgery:* general surgery, neurosurgery, orthopaedic, otolaryngology, thoracic and cardiovascular, urology

Appointments to residencies are made by the director of the hospital, upon the recommendation of the appropriate clinical department chairperson. Correspondence, applications, and residency inquiries should be addressed to the chairperson of the respective department or program at: University of Maryland Hospital, 22 South Greene Street, Baltimore, Maryland 21201.

## ADDITIONAL EDUCATIONAL PROGRAMS

**Baccalaureate Degree.** Selected students entering the School of Medicine from colleges which usually grant a baccalaureate degree after the successful completion of the first year of medicine, are responsible for: (1) providing a certificate from the college or university certifying eligibility for this degree, and (2) meeting all requirements of the School of Medicine for advancement to the second year.

**Graduate Program.** Graduate courses and research opportunities leading to advanced degrees are available in most of the basic science departments of the School of Medicine. Students pursuing graduate work must be admitted to the Graduate School and meet the prerequisites of the Graduate School and the department. A catalog of courses and information concerning the graduate programs offered at the University of Maryland at Baltimore can be obtained from the Office of the Dean for Graduate Studies and Research, University of Maryland at Baltimore, Baltimore, Md. 21201.

**Combined MD-PhD Program.** Properly qualified medical students may elect to enter a combined educational program leading to the doctor of medicine and graduate degrees. Currently there are four approved MD-PhD programs: microbiology, School of Medicine (MMIC); pathology, School of Medicine (PATH); pharmacology and toxicology, School of Medicine (MPET); and physiology, School of Medicine (MPHY). Other programs are undergoing reevaluation by the School of Medicine and the Graduate School. Interested students are advised to contact the individual departments or the Dean for Graduate Studies.

**Program of Continuing Education.** The University of Maryland School of Medicine is concerned with three phases in the education of physicians: undergraduate, graduate, and post-graduate or continuing medical education. Recognizing its responsibility to the people and physicians of Maryland, the medical school strives to make continuing medical education as meaningful and accessible to the state's physicians as possible. Such a commitment is fulfilled through the Program of Continuing Education, administered by the Assistant Dean for Continuing Medical Education and a full-time staff, with the assistance of the faculty committee on continuing education. The programs offered are approved by the American Medical Association for credit in Category 1, towards its Physician's Recognition Award. Courses and other educational activities sponsored by this program can also be used by a physician to meet the Maryland requirements for relicensure.

Continuing education is essential to maintaining the skills and competence of the physician. All professions, but especially physicians, are called upon by society to continue to learn. The physician must rely upon continuing education programs to bring to his practice new medical knowledge as it becomes available. This is accomplished in a variety of ways including individualized continuing education (such as journal reading, audio cassettes, consultation, and preceptorships); hospital-based continuing education (rounds, conferences and other formal presentations in the community hospital); and formal lectures, seminars and workshops at the university's medical center.

Dedicated to this philosophy, the Program of Continuing Education, in close cooperation with the departments and divisions of the School of Medicine, annually prepares a comprehensive program of continuing medical education activities to provide relevant and new information to Maryland physicians. To the greatest extent possible, the program is structured around the educational needs of practicing physicians. Both the type and content of the instructional programs, as well as their instructional design, are varied in order to satisfy the learning needs of as many physicians as possible. A special effort is made to provide learning situations in the local hospital and other health care settings where the physician practices daily.

Through the Visiting Professor Program, the medical school provides continuing education opportunities in community hospitals where they are convenient and accessible to the practicing physician. These programs are often developed in response to the hospitals medical care audit activities. In addition, a wide variety of one to three-day symposia are presented each year on general and subspecialty topics of current interest. Other courses are also offered on the medical center campus and range from weekly Grand Rounds in the various major disciplines of medical practice to special evening refresher courses.

Another important effort is the opportunity given to the practicing physician who wishes to return as a trainee to the medical center. Through the Visiting Practitioner Program, physicians enter an individualized refresher course of graduate training for a limited period of time varying from one to several weeks.

Additionally, close cooperation with the Office of Medical Education makes the extensive audio-visual resources of the medical school available for use in continuing medical education programs, both on and off campus. The Office of Medical Education also provides for a lending library of audio-visual and other materials which can be used in individualized continuing education by practitioners throughout the state. Contact is also maintained with the other providers of continuing medical education within Maryland in an effort to coordinate continuing medical education activities for the state's practitioners.

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# COURSE OFFERINGS

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## ANATOMY

The Department of Anatomy provides instruction in the various anatomical sciences. Courses are offered to both medical students and to graduate students working toward a MS or PhD. The primary educational goal of the department is to provide basic understanding of the structure of the human body as related to function. Where relevant, important clinical and research applications of the material under study are described. The study of human structure includes all levels from gross morphology seen in the dissecting room to the fine structure as revealed with the electron microscope. Special emphasis is placed on the study of neuroscience where neuroanatomy is taught in an integrated format with neurophysiology, neurochemistry, neurobiology, and clinical neurology.

A knowledge of anatomy is essential to the proper understanding of clinical practice. Since anatomy is a broad and relatively precise discipline, there is a heavy demand upon each student's study time. Accordingly, the courses are designed to help students with their own learning process, as well as to provide a comprehensive treatment of the subject including both theoretical lectures and practical laboratory assignments.

All full-time members of the department are actively engaged in research; the diversity of which reflects a wide range of interests. The faculty also offers a variety of advanced courses to medical and graduate students in the anatomical sciences.

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

**MANA 505. Genetics.** This course is primarily designed for nursing students. Basic principles of human and medical genetics are stressed with attention given to underlying mechanisms of genetic disorders of man. Other areas developed are congenital malformations, developmental genetics, probability, and genetic counseling.

**MANA 511. Anatomy of the Human Body.** This course provides the student with a comprehensive understanding of the morphology of the human body. The basic concepts of structure as they are related to function are described in lectures and demonstrations. Laboratory facilities are provided for dissection of the human body and for the study of osteology and projected material. The course includes instruction in living anatomy, embryology, roentgen anatomy and important clinical applications.

**MANA 512. Histology and Cell Biology.** This course offers students a basic knowledge and understanding of the microscopic structure of the human body including developmental anatomy and all fine structure. The interdependency between structure and function in the different tissues and organs of the body is emphasized. Clinical and research applications of the course material are also stressed. Histological slides are provided for laboratory study and special lectures are given on functional ultrastructure.

**MANA 513. Neurological Sciences.** This course provides an integrated study of neuroanatomy, neurophysiology, and neurochemistry. The structure and function of the central nervous system is presented simultaneously. Facilities are provided for dissection of the human brain, examination of stained microscopic sections of various levels of the brain stem, and laboratory experience involving the study of functional aspects of the nervous system.

**MANA 514. Genetics.** This course comprises a series of one-hour lectures which include a basic consideration of the principles of genetics, population genetics, biochemical genetics, radiation genetics, immunogenetics and microbial genetics. Special emphasis is placed on the role of genetics in health and disease.

#### *Electives*

Gross Anatomy and a number of special electives are available to clinical and preclinical students. These are listed in the graduate school and medical school elective catalogs.

## ANESTHESIOLOGY

During the first year the Department of Anesthesiology, in conjunction with various basic science and clinical departments, presents a series of lecture-demonstrations dealing with the practice of emergency medicine. In the second year the core curriculum in anesthesiology is presented as part of the "Introduction to Clinical Practice."

In addition, during the first two years the department participates in lectures, conferences and laboratory exercises of various preclinical departments. Such participation is intended to illustrate the application of basic science principles to the clinical practice of anesthesiology. Emphasis is placed on the physiologic and pharmacologic basis for preanesthetic medication, choice of anesthesia and the management of patients before, during and after surgery.

Electives of varying orientation and complexity are provided during all of the four years. These include clinical anesthesiology, obstetrical anesthesia, and critical care medicine. Further information and details concerning the elective courses may be found in the electives catalog or by contacting the department chairperson.

## BIOLOGICAL CHEMISTRY

Biochemistry is the subject that seeks to understand the phenomena of biology in terms of molecular structure and interaction. As such, it permeates all of biology and medicine and is a fundamental prerequisite to other medical sciences, especially pharmacology, microbiology and pathology, as well as the clinical subjects.

A teaching goal of the department is to present a concise but comprehensive lecture-conference course including as major subjects: proteins, enzymes, nucleic acids, intermediary metabolism of major food stuffs, energy production and utilization, chemical aspects of hormones, protein and nucleic acid biosynthesis and biochemical genetics. In addition, the introductory medical course includes a systematic series of sessions organized with the Department of Medicine which demonstrate the application of biochemistry to the understanding of human metabolic disorders.

Because some entering students have had a reasonably thorough exposure to biochemistry, the department offers a place-out examination during the first week of the freshman year.

In connection with the elective program embodied in the revised curriculum, a number of special seminar-conference topics are offered in both the January and June electives period. Details and description of course offerings can be found in the electives catalog. Additionally, students with special interests in biochemical investigation are encouraged to ask faculty members about opportunities for part-time or summer research. Limited funds have been available to support part-time research assistants from the medical classes.

The department also offers a doctoral program and a series of advanced courses (see Graduate School Catalog). Research interests of the staff include a number of areas in metabolism and enzymology (both mammalian and microbial), transport and membrane biochemistry, enzymology and regulation of melanin pigmentation, collagen structure and metabolism, hemoglobin biochemistry, genetics and morphogenesis of viruses, and regulation and synthesis of glycoproteins.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBIC 510. Biochemistry.** An introduction to the later preclinical and clinical subjects, the course is presented in the first semester and is oriented toward mammalian metabolism and enzymology and those aspects of general biochemistry common to all organisms. A separate, but closely related course, correlative medicine, brings clinical correlation to the biochemical material in a series of weekly presentations of scientific clinical lectures, sometimes centering around a patient.

### *Fourth Year*

**MBIC 548. Research Elective.** This gives the student the opportunity to work with various

faculty members in the following areas: 1) amino acid metabolism, collagen structure and metabolism, and amino acid racemases and epimerases; 2) biochemistry and genetics of virus development and assembly, as well as regulation of development; 3) physical-chemistry and chemistry of proteins; 4) microbial metabolism and physiology, as well as membrane transport of amino acids; 5) regulation of enzyme action by allosteric interactions; 6) melanin formation and its regulation in mammals; 7) membrane structure and function in mammalian and microbial systems; and 8) membrane glycoprotein and phospholipid biosynthesis.

## BIOPHYSICS

It is the aim of the Department of Biophysics to provide medical students with a background in the physicochemical principles necessary to an understanding of physiology and the neurosciences.

The department offers a program of graduate study leading to the PhD Degree. Study programs are flexible and depend on the preparation and interest of the student. Arrangements for a combined MD-PhD program are available on an individual basis.

Information regarding requirements, graduate courses offered, and research interests of the staff are available from the department at 660 W. Redwood Street, Baltimore, Md. 21201. Deadline for graduate applications is March 1.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MBPH 510. Principles of Biophysics.** This course is given in cooperation with the Department of Physiology and is required of medical students. It is comprised of an introduction to cell physiology with special emphasis on osmotic and electrolyte balance in cells, the processes underlying the generation of the membrane potential, the mechanisms involved in electrical excitation of nerve, the transfer of excitation across synapses, and the mechanism of muscle contraction.

### *Electives open to First, Second, Fourth Year Students*

**MBPH 511. Topics in Membrane Biophysics and Physiology Elective.** This course covers the following: 1) Fundamentals of membrane permeability and transport; 2) enzymatic basis for active transport; 3) nerve excitation and conduction (cable properties and biophysical analysis); 4) muscle contraction and excitation-contraction coupling; and 5) selected topics of possible clinical significance.

**MBPH 512. The Application of Computers to Medicine Elective.** This program introduces the student to the uses of computers in the biosciences and medicine. Each student will have an opportunity to acquire experience using a terminal to interact with a computer. An introduction to the techniques needed to undertake digital simulation of physiological processes, statistical analysis, plotting and FORTRAN programming will be presented.

## DIAGNOSTIC RADIOLOGY

Since Wilhelm Conrad Roentgen, a German physicist, discovered the x-ray in 1895, its use and that of other forms of radiant energy have been greatly expanded in our society. The greatest advances have been in medicine where radiographs now make or verify the diagnosis in three out of four cases of organic disease. With the recent advent of ultrasonography and the computer generation of tomograms, imaging is playing a more extended role in guiding needle biopsies, staging disease, following therapeutic response and performing selected therapeutic procedures via vascular catheterization.

The Department of Diagnostic Radiology offers the medical student an opportunity to acquire a broad base of knowledge touching on almost all aspects and subspecialties of medicine. This is accomplished through departmental teaching conferences as well as many combined conferences with other clinical departments. Case discussions in conjunction with film, slide, and clinical presentations enhance the learning process in order to enable the student to apply his radiographic training to any field of medicine.



The Department of Radiology was established in the University of Maryland Hospital in 1911, the first such in a Baltimore hospital. In 1956, separate divisions of diagnosis and therapy were established. In 1978, the divisions were felt mature enough to be made separate departments. The newest diagnostic techniques have been added including diagnostic ultrasound, angiography, computed cranial and computed body tomography, and interventional procedures. New methods of teaching radiology, both as a separate and integrated discipline, are continually being explored and applied.

## UNDERGRADUATE MEDICAL EDUCATION

### *First Year*

**Radiologic Anatomy.** First semester. A correlated course is given in conjunction with the Department of Anatomy. This course consists of nine lecture-demonstrations devoted to the skull, chest, gastrointestinal tract, genitourinary tract, spine and joints. Not only is the normal anatomy shown, but the radiologic aspects of a few easily comprehended pathologic processes are also demonstrated for emphasis and correlation.

### *Third Year*

**RADI 540. Radiologic Orientation.** Small groups of students are assigned for a period of three weeks to the Department of Diagnostic Radiology. Further subdivision allows individual instruction as the student rotates through the many subspecialties within the department including fluoroscopy, special procedures, neuroradiology, urography, pediatric radiology, ultrasound, and introduction to the Department of Therapeutic Radiology. Students attend all departmental teaching rounds and conferences as well as some joint conferences with other departments. Special lectures designed especially for the medical students are given daily by the faculty and residents within the department.

### *Third and Fourth Year*

**General Radiology Elective.** For the student who desires to learn more about properly using and interpreting diagnostic imaging, a flexible four-week course is available. The student is expected to investigate some aspect of radiology thoroughly, and, with the aid of a faculty advisor, present his or her material to the residents and staff. RADI 540 is a prerequisite.

## GRADUATE PROGRAM

A four-year residency is offered in diagnostic radiology at the University of Maryland Hospital. The teaching program is carried out through patient care, under the supervision of a full-time staff, didactic lessons, and numerous teaching conferences.

## EPIDEMIOLOGY & PREVENTIVE MEDICINE

Epidemiology is a relatively new biomedical discipline which lies at the interface of clinical practice and basic medical science. The clinical arena within which epidemiologists work is termed *preventive medicine*. The effective practice of epidemiology and preventive medicine requires a comprehensive knowledge of clinical medicine and basic medical science, as well as of experimental methodology, biostatistics and the social sciences.

The department is engaged in an active program of teaching, research and service. Principles and practice of epidemiology, biostatistics and preventive medicine are taught in the first, second and fourth years of the curriculum. A summer fellowship program in which students engage in epidemiological projects under faculty supervision and participate in departmental seminars and workshops is also offered. All students are invited to the general seminars, resident seminars or statistics/computing seminars which are scheduled each week throughout the academic year.

An approved three-year residency leading to certification in general preventive medicine is offered to clinically qualified applicants. The program is designed to satisfy a wide variety of professional aspirations. These include theoretical or field epidemiology, hospital or health care administration, biostatistics, as well as clinical preventive practice.

Current departmental research activities encompass:

1. A variety of investigations in *cancer pathogenesis*, including: genital herpesvirus in cervical cancer; prognostic factors in bladder papillomata; lymphoid organs in neoplasia and cancer risks among the tuberculous;
2. A broadly-based program of studies in *hypertension*, including MRFIT and Hypertension Detection Demonstration Projects;
3. Collaborative *clinical trials* in coronary disease and diabetes mellitus;
4. Development of methods for identifying *occupational groups at high risk* of cancer and other diseases;
5. Studies in *pediatric epidemiology* and birth defects;
6. Evaluation of *geriatric, urban and rural area health education* center programs established under state mandate; and
7. An interdisciplinary clinical trial on the role of caregivers in reducing institutionalization rates among the *impaired elderly*.

The community service activities of the department are carried out through active collaboration in health planning, research and evaluation with a number of agencies and institutions concerned with health problems. These include local and state hospitals, clinics and health departments, the Baltimore City and Maryland medical societies and a variety of other federal and voluntary organizations.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

The department's teaching in the first year is coordinated with that of the Department of Psychiatry in the core course, Behavioral and Social Sciences (PSYH 510). Special emphasis is placed on the use of epidemiological methods to analyze the relationships between social and organizational factors and health status. Structural components of the health care system, such as alternative modes of health care delivery, as well as the availability and utilization of different levels of care and referral patterns, are described with special reference to the quality of health care.

### *Second Year*

#### **PREV 520. Epidemiology**

*Epidemiology & Preventive Medicine (30)*. First Semester. This course presents the methodologies available for evaluating the distribution and determinants of disease. Biostatistical concepts are introduced to enable the student to evaluate clinical and research findings published in the medical literature. Topics include: investigation of an epidemic, measures of mortality or morbidity, measures of risk, biological variability, disease screening, sampling, statistical significance, correlation, types of epidemiological studies, and interpretation of associations between risk factors and disease.

*Clinical Epidemiology (32)*. Second Semester. The distribution patterns, natural history, risk factors, and methods for control of selected diseases of public health importance are presented. The lectures are coordinated with those of other departments on each of the major organ systems included in the curriculum. Examples of diseases and organ systems presented include: hepatitis (gastrointestinal), bronchitis (respiratory), multiple sclerosis (neurological), hypertension (cardiovascular), bladder cancer (renal), diabetes mellitus (endocrine), cervical cancer (reproductive), and rheumatoid arthritis (musculoskeletal).

### *Fourth Year*

**PREV 540. Preventive Medicine in Clinical Practice.** This course consists of 12 three-hour seminars held in conjunction with the Ambulatory Medicine clerkship. The application of preventive medicine, epidemiology and statistical reasoning to clinical practice is emphasized.

The major causes of morbidity and mortality during each of the life epochs are discussed. Emphasis is upon the role of the individual practitioner in primary and secondary prevention of disease among children, adolescents, adults and the elderly. Other sessions deal with relationships between physicians and other components of the health care system, including hospitals, nursing homes, regulatory agencies, health insurance plans and the law.

### *Electives*

During the January and June minimesters, students may select coursework covering such diverse topics as medical biostatistics, implications and impact of long-term disability, parent-child-physician interactions, and the impact and prevention of birth defects.

At other times, electives are also available in biostatistics (both basic and advanced), clinical geriatrics and gerontology, intermediate social statistics, and organizational and management theory in health care.

Students are advised to check the Epidemiology and Preventive Medicine section of the electives catalog for further information.

## **FELLOWSHIPS**

Summer fellowships in preventive medicine are available to a limited number of students. Working closely with a faculty member, each undertakes a research project in preventive medicine, health care evaluation, epidemiological inquiry, computer applications or statistical analysis. The program also includes seminars and workshops which provide an opportunity for interaction among students, preventive medicine residents and faculty members. Elective credit is given to those who satisfy the requirements of the program.

## **GRADUATE AND POSTGRADUATE STUDIES**

The Department of Epidemiology & Preventive Medicine offers a three-year residency program in general preventive medicine which is approved by the American Board of Preventive Medicine. This provides a variety of opportunities for advanced study and practice in epidemiology, clinical trials, health care evaluation, public health administration and biostatistics, as well as clinical preventive medicine. Combined residency programs may be arranged for qualified applicants in conjunction with Family Medicine, Rehabilitation Medicine, Pediatrics, Internal Medicine and other clinical departments. These would enable the resident to qualify for board eligibility in both preventive medicine and the clinical specialty.

## **FAMILY MEDICINE**

The Department of Family Medicine aims to educate and train family physicians who can render high quality medical care and service to individual patients and families in a continuous and comprehensive manner. The family physician has total responsibility for patient care at the point of entry into the health care system and acts as coordinator of health care at secondary, tertiary, and long-term care phases of illness.

The department offers family medicine educational experiences for students in a model family practice setting, on the in-patient service, and through an interdisciplinary "track" system of career planning which is guided by a full-time staff of experienced family physicians. Further, students are afforded the opportunity to gain community hospital exposure, to participate in community health services and controlled practice experiences, as well as to engage in basic health care research.

A required rotation by all predoctoral medical students during the clinical years has been approved.

## **UNDERGRADUATE MEDICAL PROGRAM**

**Longitudinal Elective.** Introduced into the curriculum in 1976, this elective permits the student interested in family medicine to decide on and gain knowledge toward that career objective. Included in this offering are interesting field trips, seminars, panel discussions, and preceptorship experiences. Topics include historical medical perspectives; the economics of



medicine: the humane approach to patient care; interrelationships between patient, family, community and physician medical profession, to name a few. Throughout the four years of medical school, the student will assume responsibility for the welfare of a limited number of families.

**Minimester Electives.** During the months of January and June, students may elect to spend time in the office of a selected family physician in order to gain knowledge of the health care system at that level. In this setting, the student may opt for patient care participation and/or engage in some health care research in that ambulatory population. (This elective is not available to freshman students in January.)

**Family Practice Preceptorships.** This elective enables the student to gain insight into the life style of a family physician in a community practice setting and further demonstrates what family practice involves. Here the student has the opportunity to see the scope of the work of the family physician and participate with the family physician as he encounters and manages the diverse problems seen in a busy family practice. The student has the unique opportunity to understand each patient in relationship to his family, his job, and his total environment. Additionally, it permits the student to understand the physician's place in society, his social and civic obligations and responsibility to patients. This elective is available for four or six week periods, usually during the summer.

**Senior Elective in Family Practice.** Students will spend much of their time caring for families in the model family practice unit, the Family Health Center. They will have the opportunity to manage, under supervision, a multiplicity of problems typical of a busy family-oriented group practice. Other medical professionals are available for consultation and there is ample opportunity for coordinated, continuous care on a short-term basis. Field trips (which will augment the student's experience) are available by special arrangement.

**Senior Internship in Family Practice.** The Department of Family Medicine offers an internship to senior students that includes eight weeks of instruction in the continuity of out-patient, in-patient, and extended care problem management techniques. Students will spend a portion of their time in the out-patient area with responsibility for a select group of patient/families. Another part of their time will be spent following and being primarily responsible for a select number of patients on an in-patient service. Additionally, they will have responsibility for a number of patients at a nearby extended care facility. They will be expected to take part in a rotation, under supervision, for night and weekend call.

## **GRADUATE MEDICAL PROGRAM**

Maryland's three-year approved residency in Family Medicine is historically the second oldest in the country. Its goal is to provide a full breadth of family practice training that is required by the essentials of a family practice residency. Governed by these essentials and implemented by innovative educational methods is a philosophy designed to educate a physician in all aspects of modern family practice, as established in the "Core Content of Family Practice." Flexibility is built into the program to accommodate the specific need of the trainee and the basic health care needs of the community in which he or she will eventually serve as an individual practitioner or as a member of a group.

## **CONTINUING EDUCATION PROGRAMS**

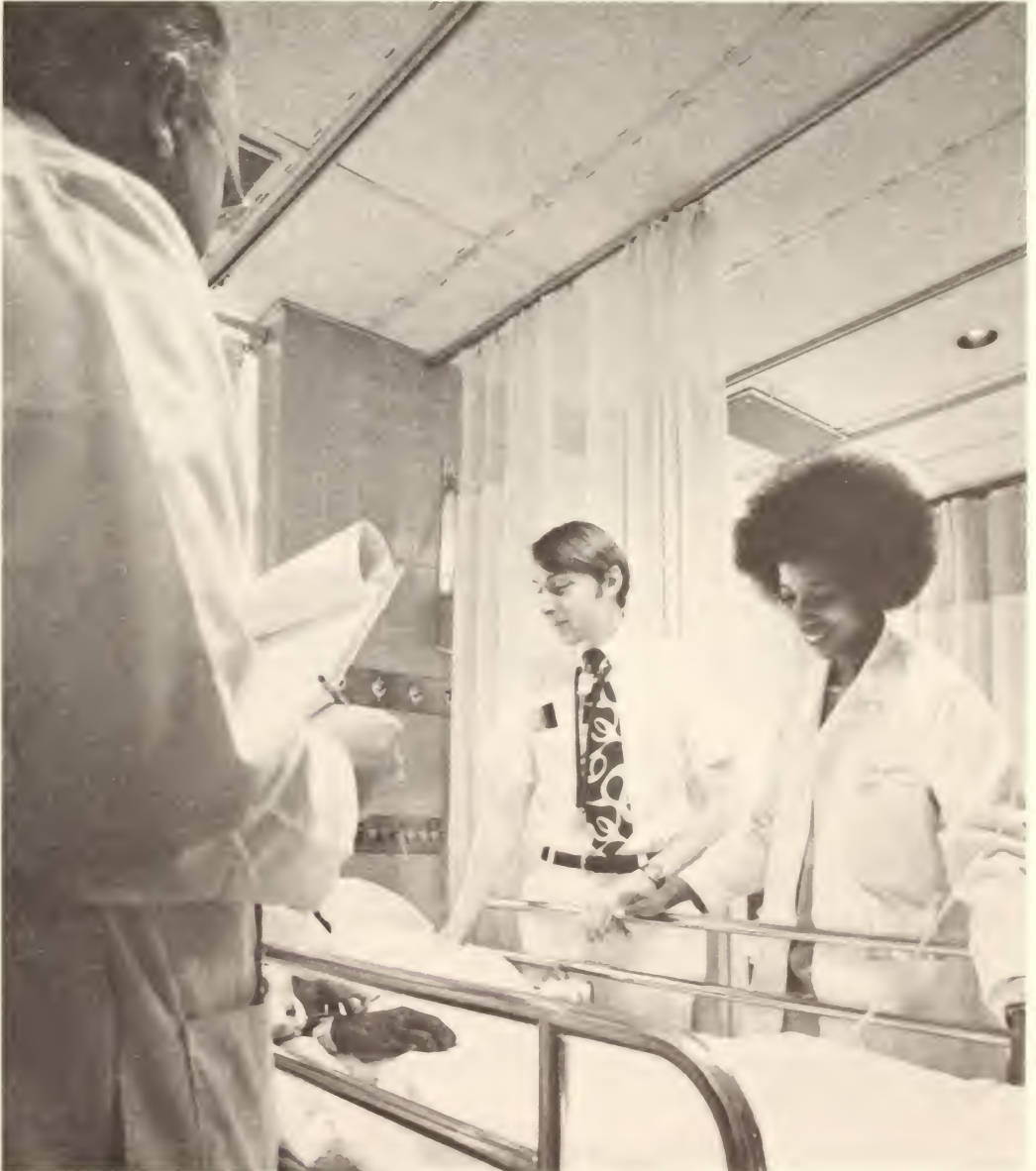
This phase of the Maryland program is based on the philosophy that the family physician's education must be a continuum throughout his or her entire career and for the additional purpose of preparing each graduate to successfully pass each recertification examination as required by the American Board of Family Practice.

A variety of continuing education programs is offered, ranging from short didactic courses to extensive in-depth courses in system-oriented clinical subjects, to tailored individual courses to fulfill the specific needs of a physician. Information on current and projected courses is available at all times from the Department of Family Medicine or the Program for Continuing Medical Education.

## INTERNAL MEDICINE

Teaching the broad and specific principles of internal medicine to students and housestaff through patient care and clinical research is the department's main objective. This cannot be accomplished unless patients are studied thoroughly utilizing modern medical techniques which are conducted within an environment conducive to learning. Each subspecialty group is expected to practice the general principles of medicine and perform specialized research. When indicated for the intelligent study of patients' problems, new and specialized diagnostic procedures are provided, such as catheterization, endoscopic and isotope procedures, and application of specialized biochemical, microbiological or immunological tests.

In their teaching, attending physicians are expected to teach the practical aspects of elaborating the medical history, perform a thorough physical examination and utilize definitive techniques which are often performed by consultative subspecialty teams. Rendering care to ambulatory patients in the medical clinics and emergency room is an aspect of practice upon which greater emphasis is placed. In the hospital and clinic settings, attempts are made to emphasize patient care and proper protection of the dignity of the individual.





## FELLOWSHIPS

**Summer Fellowships.** Students who have completed their sophomore year are encouraged to seek additional training during the summer months preceding their junior studies. This training may be obtained in one of several ways. A limited number of students are appointed to clinical clerkships on the medical wards of the University of Maryland Hospital. In these positions they are responsible, under supervision, for the history, physical examination, laboratory studies, and the progress notes of assigned cases.

In addition, a certain number of the medical subspecialty divisions provide specialized training for students as fellows during the summer months. The applicant is encouraged to apply directly to the division head. These fellowships enable the student to become acquainted with the various specialized diagnostic and research techniques, the clinical problems and therapeutic regimens peculiar to each of the medical subspecialties. Summer fellowships are available in the following divisions: cardiology, dermatology, endocrinology, gastroenterology, hematology, nephrology, infectious diseases, clinical physiology, rheumatology, nuclear medicine, and pulmonary diseases.

Interested applicants should contact the respective division head prior to January 1 of the year in which the fellowship is desired. In many instances, a fellowship award is made providing remuneration for two or three of the summer months.

**Postgraduate Fellowships.** These are available in the various specialties of medicine. For details, see the specific division.

## UNDERGRADUATE MEDICAL PROGRAM

### *Third Year*

**MEDC 530. Clinical Clerkship.** This course consists of a clinical clerkship on the medical wards of the University of Maryland Hospital or the Baltimore Veterans Administration Hospital for a period of 12 weeks. Students are responsible, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases. They attend ward rounds and conferences in general medicine with the resident staff, attending physicians and chief of service. The clinical clerk is given instruction in the keeping of medical records including a modified problem-oriented record. The student participates in a daily audit of the medical record with the medical housestaff which serves to provide more efficient hospital care.

### *Fourth Year*

**MEDC 541. Medical Clinic-Adult Ambulatory Medicine Elective.** The student is offered two choices: 1) morning is spent in the adult medical clinic with responsibility for total patient care, and may spend the remainder of the day under the supervision of the medical admitting officer assisting the management of emergencies and urgent problems; or 2) morning is spent in the medical clinic and afternoon attending subspecialty clinic or clinics of his/her choice.

Students are assigned to the primary care clinics where they gain experience with ambulant patients, gaining insight into the importance of medical record, techniques of medical audit and the role of the allied health professionals such as the nurse practitioner and the clinical pharmacist in the delivery of health care.

## Division of Cardiology

## UNDERGRADUATE MEDICAL PROGRAM

### *Fourth Year*

**Clinical Cardiology Elective, University of Maryland Hospital.** Students participate in patient evaluation and examination under the close supervision of faculty members. Basic concepts of physical examination are stressed and correlated with both noninvasive and invasive techniques of more detailed evaluation. The rotation includes an opportunity for adult and pediatric cardiology training in the clinics, coronary care unit, and graphics laboratory with emphasis on complete patient evaluation, as well as the development of individual areas of interest.



## POSTGRADUATE FELLOWSHIPS

Selected applicants participate in the activities of the division including responsibilities for cardiac catheterization, electrocardiographic interpretation, vectorcardiographic interpretation, phonocardiography, echocardiography, and exercise testing. The fellowships begin July 1 of each year and financial stipends are provided. Application is made through the head of the division and should be completed by November of the preceding year.

## Division of Dermatology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Third Year*

**DERM 530. Introduction To Dermatology.** Students are assigned reading on the more common skin eruptions. Nine two-hour clinical sessions are held for each quarter of the junior class. Individual instruction is given by one of the senior staff members emphasizing the pertinent aspects of differential diagnosis. Stress is laid in the relationship of cutaneous lesions to internal disease.

#### *Fourth Year*

**DERM 541. Dermatology Elective.** Dermatology may be taken as an elective during the fourth year. Students will work together with the Dermatology residents in the diagnosis and treatment of patients with skin eruptions. They will actively participate in grand rounds, daily seminars and the weekly journal club. They will also have the privilege of attending the clinical sessions of the Maryland Dermatological Society.

### GRADUATE STUDIES

Instruction is given in dermal pathology, microbiology, pharmacology, venereology, immunology and clinical dermatology. Trainees are required to attend local and regional Dermatology Society meetings. Attendance is also required at the annual meeting of the American Academy of Dermatology. The division helps to defray the expenses for attending this meeting.

Trainees are encouraged to study research methods and to actively participate in studies. Part of the training period is spent at the Veterans' Administration Hospital and Mercy Hospital as well as the University of Maryland Hospital.

## Division of Endocrinology and Metabolism

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

In the second semester an intensive two-week course is given in collaboration with the Departments of Pathology, Pharmacology and Pediatrics emphasizing the pathophysiologic basis for clinical disturbances of endocrine function.

Summer fellowships of eight-ten weeks are also offered to students with emphasis on clinical or research training depending upon the student's interests and capabilities.

#### *Fourth Year*

**ENDO 541. Clinical Endocrinology and Metabolism Elective.** The course provides seniors with a broad clinical experience that is accomplished through a four-week concentrated period of training devoted mainly to a study of patients with clinical disorders of endocrine function. Students are involved in the day-to-day management of hospitalized patients and participate in weekly outpatient clinics under the direct supervision of staff members. The pathophysiologic basis for diagnostic and management aspects is presented at daily rounds and at weekly in-depth conferences with the students. A separate elective of 12 weeks is also available to interested students who may desire a longer period of training and or wish to pursue a clinical or laboratory research project.

**Affiliated Hospital Electives.** Electives in Endocrinology are available at York (Pa.) Hospital and the Baltimore Veterans Administration Hospital.

## POSTGRADUATE FELLOWSHIPS

Full-time positions are available to selected candidates who have usually completed two or more years of house officer training. Fellows participate in ongoing research projects and independent investigations are encouraged. These trainees also participate in all clinical activities within the division. A financial stipend is provided. Applications may be made through the division head.

## Division of Gastroenterology

### UNDERGRADUATE MEDICAL PROGRAM

#### *First and Second Year*

**Minimester in Liver Disease.** Twenty-four hours devoted to selected topics and current pathophysiology and treatment concepts in clinical liver disease. Twelve topics such as jaundice, ascites, coma, and portal hypertension are treated in depth.

#### *Clinical Elective—Fourth Year Students*

A broad clinical experience in consultations, reading and conferences on G.I. and liver problems. Students evaluate consultations with G.I. fellows and senior staff, plan in diagnosis and management and follow patients through definitive treatment and discharge. A series of specific goals are available for the four-week rotation and at least 30 papers are assigned during this time. Attendance at six hours of conferences and ten hours of G.I. clinical rounds each week and four hours of clinic is a part of the rotation.

#### *Research Experience*

Summer research electives in G.I., liver and nutrition are available and many carry a stipend. To obtain stipend, application must be made by the first week in February.

## Division of Hematology

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

Members of the division are responsible for the first semester part (hematology) of the sophomore course in clinical pathology. Clinical and laboratory aspects of blood dyscrasias are covered with an introduction to blood group immunology.

#### *Fourth Year*

**HEMA 541. Clinical Clerkship in Hematology Elective.** As a clinical clerk, the student will participate in all clinical activities of the Division of Hematology and will be considered as an integral part of its staff.

**Hematology Elective, York (Pa.) Hospital.** In-patient as well as out-patient consultations will be seen and appropriate diagnostic hematology procedures will be reviewed.

## POSTGRADUATE FELLOWSHIPS

At least one full-time fellowship in hematology is available to applicants with a minimum of one year internship completed. A stipend is provided.

## Division of Infectious Disease

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**INFE 541. Training in Infectious Diseases Elective.** (University or Baltimore Veterans Administration Hospitals). The diagnosis of infections and proper management of patients with these diseases are taught by exposure of the student to practical, clinical, laboratory and research problems. The student will see consultations under the supervision of a full-time teaching fellow or medical resident. Attending rounds are made at least three times weekly. A weekly clinical infectious disease conference for faculty, house staff and students alternates

between the University and the Baltimore VA Medical Center. Additionally, student conferences covering urinary tract infections, pneumonia, meningitis and other common topics in infectious diseases are conducted by the postgraduate fellows twice weekly for all the students taking the elective at either hospital.

**Affiliated Hospitals.** Elective opportunities in infectious diseases are also available at York (Pa.) Hospital and Mercy Hospital.

## **POSTGRADUATE FELLOWSHIPS**

The postgraduate fellowship is a two-year combined University of Maryland and Baltimore VA Medical Center program. The first year is clinically oriented and is spent at both hospitals consulting on patients with problems related to infectious diseases. Infectious disease experience is also obtained through rotations at the Maryland Institute of Emergency Medical Services, the Baltimore Cancer Research Center, the Center for Vaccine Development and the Clinical Microbiology Laboratory. The fellow will see consults, supervise residents, interns and the medical students and spends much of his time teaching as well as in patient care. The second year of the program is oriented towards research. Special interests in the division include newer antibiotics, nosocomial infections and vaccine development for viral and diarrheal diseases. A stipend of approximately \$16,000 is provided. Application is made through the division head.

## **Division of Introduction to Medicine (Physical Diagnosis)**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Second Year*

**PDIA 520. Introduction to Clinical Medicine.** Early in the year, the entire class receives instruction in the techniques of elaborating the clinical history and in performing the physical examination. Small tutorial groups are formed under the direction of the instructor. During the first five weeks, experience in examination of normal individuals is given one afternoon weekly. An integrated lecture series is given by various members of the clinical faculty. During the remainder of the year, students become acquainted with abnormal signs through examination of hospitalized patients. This practical instruction includes children and patients with neurologic, ophthalmologic and chronic diseases with instruction provided by members of the departments of pediatrics, neurology, ophthalmology, and rehabilitation medicine. Members of the Division of Cardiology instruct physical examination of the cardiovascular system.

## **Division of Nephrology**

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Fourth Year*

**Nephrology Elective, University of Maryland Hospital.** Students who have completed their required junior electives in medicine, surgery, pediatrics and obstetrics may elect a clinical rotation in nephrology. Although one month electives will be accepted, the student is encouraged to spend two months in order to have time to use the skills developed and to become thoroughly familiar with the approach to patients with kidney disease. Students with special interest in particular aspects of kidney function or kidney disease may be permitted to pursue those after consultation with the division head.

**NEPH 541. Nephrology Fellowship Elective, Maryland General Hospital.** This elective exposes students to the practice of clinical nephrology and to the management of acute and chronic renal failure.

## **POSTGRADUATE FELLOWSHIPS**

Qualified physicians may apply for full-time fellowships in nephrology. Although one-year fellowships of primarily clinical training are offered, preference will be given to those desiring two years of training.



## Division of Nuclear Medicine

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**NMED 541. Nuclear Medicine Elective, York (Pa.) Hospital.** Basic instruction in radioisotope technique and applications to both diagnosis and therapy are presented which includes active participation in clinical evaluation of patients seen in a busy nuclear medicine department.

### POSTGRADUATE FELLOWSHIPS

Applicants must have completed internship and a minimum of one year of residency in medicine, radiology or pathology. The fellowship will be for not less than two years.

## Division of Pulmonary Diseases

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

Members of the division take part in the teaching of the physiology course with emphasis on the clinical application to basic respiratory physiology. This includes an introduction to clinical medicine and the sessions in the course on correlative medicine.

#### *Second Year*

During the subject systems portion of the second semester, a period of two weeks is devoted to the respiratory system. The teaching of clinical medicine is integrated with epidemiology, pharmacology, microbiology and closely correlated with the teaching of physiology and pathology. This does not attempt to provide a course in respiratory diseases but the most common and most important groups of diseases are included.

#### *Third Year*

During the rotation on medicine at the University of Maryland and affiliated hospitals (Baltimore VA Hospital, Maryland General Hospital and Mercy Hospital), junior students have the opportunity to make contact with faculty members and fellows during clinical ward rounds on patients with pulmonary disease. A weekly pulmonary conference is held at each of these hospitals where students have an opportunity to present cases from their wards.

#### *Fourth Year*

In the ambulatory care portion of the curriculum, senior students have an opportunity to spend one afternoon during each week in the Western District Chest Clinic. They see patients during the early part of the afternoon, present them to faculty members or fellows, and attend a one-hour x-ray-oriented conference at which a wide variety of pulmonary problems is presented.

**PULM 541. Pulmonary Diseases Elective.** Experience is given in the areas of clinical medicine and applied physiology with emphasis on correlation of clinical, roentgenographic and physical findings.

## Division of Rheumatology

### UNDERGRADUATE MEDICAL PROGRAM

The Rheumatology Division offers several electives for senior students which, by design, present the spectrum of rheumatic disease and approach to diagnosis and management. Integration of clinical features with the mechanisms of disease processes is accomplished through informal tutorial sessions as well as didactic lectures. The rationale of the various management programs including drug therapies, physical medicine and orthopaedic surgery is emphasized. Experience is gained in performance of diagnostic procedures (e.g., arthrocentesis) and in interpretation of relevant laboratory test systems.

## MICROBIOLOGY

Training in microbiology within the medical school curriculum occurs primarily during the sophomore year when all students are required to take medical microbiology and immunology. In addition, a substantial number of seniors take clinical immunology during the elective portion of their training. Individual staff members provide instruction and guidance throughout the entire medical curriculum.

The department also offers the MS and PhD degrees. While the MS may be offered in special instances, priority for research facilities will be given to PhD aspirants. This department encourages students who wish to enroll in the MD-PhD program.

Emphasis is placed on the medical aspects of microbiology. Varied research programs are available and opportunities are open for experience in teaching and in diagnostic bacteriology and serology. Ecological studies on rickettsioses and arboviruses in overseas areas may be available for interested students.

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

**MMIC 520. Medical Microbiology and Immunology (8).** First semester. Five lecture hours and seven hours in laboratory and group conferences per week. This course begins with an introduction to basic principles of immunology and then proceeds to consider the major groups of bacteria, spirochetes, fungi, rickettsiae, viruses and parasites that cause human disease. Emphasis is placed upon an analysis of the properties of microorganisms thought to be important in disease production, pathogenesis of infection and interaction with host mechanisms, epidemiology, and control measures.

#### *Electives*

Students are encouraged to take elective work throughout their training. The following are specifically designed for medical students:

- MMIC 541. Clinical Immunology
- MMIC 542. Medical Zoology and Parasitology
- MMIC 543. Principles of Ionizing Radiations
- MMIC 548. Research in Microbiology

A number of graduate school courses are also available to qualified students. Interested students should contact the department for details.





## NEUROLOGY

Neurology is broadly, but properly, interpreted as the study of the nervous system including central, peripheral and neuromuscular systems. It includes basic and clinical aspects of the human nervous system, both normal and diseased. Accordingly, department members participate in planning and delivering course material in all four years of undergraduate medical education. While it is recognized that only a relatively small number of medical students will choose careers in medical or surgical neurology or in the basic neurosciences, it is believed that all medical graduates must have sufficient understanding of the basic structure and function of the nervous system to perform a satisfactory neurological examination, recognize and treat the many common neurological disorders and know when to refer the patient to a neurological specialist. Of special importance is the ability to distinguish between functional and organic neurological symptoms or signs.

While the organization of the postgraduate program of the department, as well as the interests and the abilities of the full-time faculty, are especially suited to the training of academicians and investigators, the department recognizes its responsibility also to train neurologists who will practice their specialty in this community and state.

The discipline of neurology has maintained its traditional ties with basic science and by its complex but logical nature, has typified the scholarly aspects of medicine. Recent methodological and scientific advances have created a new and therapeutically-oriented specialty which is represented in the philosophy and goals of this department.

### UNDERGRADUATE MEDICAL PROGRAM

#### *First and Second Years*

**NEUR 510. Neurological Sciences I.** Lecture demonstrations of clinical cases constitute an integral part of this course. There is emphasis on correlation of anatomy and physiology with clinical material. Neurologic aspects of physical diagnosis are taught in both the first year and second year of medical school with instruction in performance of the normal neurologic examination as well as examination of selected patients with neurologic disorders.

**NEUR 520. Neurological Sciences II.** In conjunction with the Department of Pathology, and with contributions from other clinical and basic science departments, there is a correlative course given in the second year of medical school in which pathology of the nervous system is correlated with clinical disease.

#### *Third Year*

**NEUR 530. Neurological Sciences III.** All members of the third year class have a three-week clerkship on the neurology-neurosurgery service at the University of Maryland Hospital or the Baltimore Veterans Administration Hospital. A didactic series of lecture-demonstrations is given by the neurology and neurosurgery faculty and students attend the combined conferences in both disciplines. In addition, students attend rounds; may assist in the performance of some procedures; and, under housestaff and attending staff supervision, are responsible for the care of patients with neurological disorders.

#### *Electives*

**NEUR 541. Clinical Electives.** After completion of the third year, students are offered a variety of clinical experiences on the neurological service at: University of Maryland Hospital, Mercy Hospital, Montebello State Hospital, St. Agnes Hospital, Baltimore Veterans Administration Hospital, and York (Pa.) Hospital. The neurologic examination of the patient is emphasized, as well as the study and application of a wide variety of specialized neurologic diagnostic techniques. Each student will become proficient in the taking of a neurologic history, the performance of the neurologic exam, the formulation of a reasonable diagnostic impression or differential diagnosis, a plan of investigation and management for several of the more common neurologic problems.

**NEUR 548. Neurological Research Electives.** In all four undergraduate years, a limited number of students will have the opportunity to work with individual members of the department in the following areas: 1) cerebrovascular physiology; 2) neuromuscular research; 3)



neurophysiology; 4) vascular ultrastructure (SEM and TEM); 5) neurochemistry; 6) neurovirology; and 7) autonomic nervous system. The student will learn the principles and methods of investigating a problem. He/she will be involved with ongoing research and in some instances, especially with the longer electives, publication of results will be possible.

#### *Fellowships*

Students who have completed their first, second or third years and have an interest in neurologic sciences may apply for additional training in clinical neurology or in one of the research laboratories of the department. Qualified students may receive remuneration as fellows for the ten-week fellowships taken during vacation periods.

### **GRADUATE STUDIES**

There is a fully approved three-year training program in the specialty of neurology at University of Maryland Hospital. This provides for clinical training as well as rotation through the associated basic science disciplines. In addition, fellowships are available for subspecialty neurology training, such as EEG and EMG. For further information contact the department chairperson.

### **OBSTETRICS AND GYNECOLOGY**

The Department of Obstetrics and Gynecology emphasizes three areas of concern — education, research and service.

Educationally, the department provides a learning experience that encourages each student, regardless of ultimate career choice, to develop professional attitudes, diagnostic skills and knowledge relevant to the human female and to her sexual reproductive system. This experience enables each student to assume more effective responsibility for the general delivery of health care to the adolescent, adult and aging female and to the newborn.

The student is taught to recognize more accurately those patients who require special gynecologic consultation. He/she gains insight into such health-related social problems as family planning and other aspects of population control, sexual difficulties, sterilization, induced abortion and unwed pregnancies.

The educational material is presented in such a way as to familiarize students with all sources of knowledge relevant to these subject areas so that each may extend knowledge and skills in a direction and depth appropriate to current and ultimate career goals. Attention is also directed to areas in which available knowledge is deficient with the attempt to stimulate the student to take advantage of elective opportunities in basic, clinical and social research.

The service roles focus on the general areas of obstetrical and gynecologic care. Obstetrics deals with a high-risk pregnancy population and provides excellent educational opportunities for both student and resident. Specialty clinics in endocrinology, complicated pregnancy, cancer, pre- and post-operative evaluation, and family planning provide specific, specialized areas of instruction in addition to rendering service to large numbers of patients. Cancer detection and therapy play a major part in the gynecologic program.

The department is heavily committed to the use of audiovisual aids for the enhancement of the educational experience of both medical student and resident. The faculty also contributes to the postgraduate educational programs at University of Maryland Hospital and throughout the state.

### **UNDERGRADUATE MEDICAL PROGRAM**

#### *Third Year*

**OBST 530. Clinical Clerkship.** Students are assigned to obstetrics and gynecology for a period of six weeks. As clinical clerks they participate in the original diagnostic studies, pelvic surgical procedures and post-operative care of hospitalized patients. Instruction in prenatal and gynecologic outpatient care is accomplished in the outpatient department. Seminars and departmental conferences with the attending staff and house officers are employed for teaching the art of correlating observations, diagnosis and therapy. Frequent and close contact

with faculty staff is achieved by means of a preceptorial system which assigns a group of two or three students to a member of the faculty for the entire clerkship. As an alternative to the clerkship at the University of Maryland Hospital, a similar instructional program is offered to a limited number of students by the obstetrics and gynecology department at Mercy Hospital, South Baltimore General Hospital and St. Agnes Hospital.

#### *Fourth Year Electives*

**OBST 541. Obstetrics and Gynecology Elective.** The student may choose to rotate through a variety of areas within the department or may spend time more intensively in a specific area.

**Affiliated Hospitals.** Electives are available at: Mercy Hospital, South Baltimore General Hospital, and York (Pa.) Hospital.

## **OPHTHALMOLOGY**

The Department of Ophthalmology participates in the Introduction to Clinical Practice courses given in the first and second years. During the freshman year, emphasis is placed on achieving competence in performing an ophthalmological examination and emergency care for ocular problems. Self-instructional material is used to learn the technique of ophthalmoscopy.

During the sophomore year, the techniques necessary for a complete ophthalmological examination are reviewed. In addition, aspects of clinical ophthalmology are covered in small group discussions, plus assistance by self-instructional material.

Students interested in a more complete experience in ophthalmology may elect a clerkship during the senior year at the University of Maryland Hospital, Mercy Hospital, or Maryland General Hospital. Time is divided between outpatient, ward and operating room. Conferences and Grand Rounds are included in the program. Additionally, opportunities exist for elective participation by students in the department's active program of ophthalmic biomedical research.

Students and physicians are encouraged to attend Grand Rounds on Tuesdays from 8:30 a.m. to 10:00 a.m., and to refer patients with ocular problems for examination. Discussion of differential diagnosis and possible methods of therapy are included. A lecture on an aspect of ophthalmology follows, from 10:30 a.m. to 12:00 Noon.

## **GRADUATE PROGRAM**

A three-year residency program providing clinical training is offered at University of Maryland Hospital, with a rotation to Mercy Hospital. Appointment is by application to the Department of Ophthalmology, University of Maryland Hospital.

## **POSTGRADUATE PROGRAM**

Special courses for both nonspecialists and ophthalmologists are given at various times throughout the year by the Program of Continuing Medical Education.

## **PATHOLOGY**

The primary goal of the Department of Pathology is the better understanding of human disease with emphasis on mechanisms of disease and changes occurring at the subcellular level and in molecular terms. The student achieves this goal in three phases: 1) by acquiring the basic principles of pathology and applying those principles to the diagnosis and study of health care delivery as expressed in diagnostic areas such as surgical pathology, clinical pathology, cytology, forensic pathology and autopsy pathology; 2) by establishing a philosophy of critical evaluation and judgment concerning the problems of health and disease in humans; and 3) by developing feelings of personal responsibility and ethics for the practice of medicine.

The department's philosophy is that the study of disease includes both structure and function and is carried out from the level of the patient to that of the molecule.

The student is exposed to anatomical and clinical hospital pathology services with additional training at Baltimore Veterans Administration Hospital and other local hospitals. Research

efforts of the department include: cell injury, cancer immunology, kidney structure and function, chemical carcinogenesis, cell immunology, red cell metabolism and chemical test methodology.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

**PATH 501. General and Systemic Pathology.** The course is designed to cover the essentials of pathology in such a way as to form a good foundation for the student's continuing medical education and is divided into "general" or pathobiology and systemic pathology. The course starts with the study of the basic principles of pathology as embodied in the areas of cell injury, inflammation, immunopathology, neoplasia, environmental and forensic pathology. This is followed by the study of the diseases of the various organ systems. Interdepartmental seminar-type presentations are given to cover broad areas of interest to various disciplines. Clinical input is given through correlative sessions stressing mechanisms of disease. The course consists of lectures, small group laboratories and seminars, presentations of fresh material in the autopsy room, presentation of museum cases, and clinical pathology laboratories. The laboratory sessions are in smaller groups under the direction of faculty members assigned to each student group. Each student will rotate through the various laboratories (clinical pathology, combined microscopic and gross, museum case analysis and review of fresh autopsy material). Sessions in the clinical pathology laboratories emphasize the acquisition of skills necessary for clinical laboratory analysis.

## ELECTIVES

Supplementing the core program are more than 20 course offerings for freshman, sophomore and senior medical students. These opportunities span a wide range of departmental activities from system-oriented courses such as in renal, pulmonary, introductory neurochemistry or cardiovascular pathology to task-oriented instructions such as environmental pathology and carcinogenesis. The latter is conducted with the aid of a number of guest speakers who are leading authorities in their fields.

Other courses are of more general interest such as seminars in clinical pathology or clinical clerkships in Baltimore area hospitals. Medical students also have access to courses in experimental pathology such as histochemistry, tissue culture or pathological biochemistry.

Most of the above mentioned courses, conforming with the 4-1-4-1 arrangement of the freshman and sophomore years, are offered in January and June while others are given during the regular semester as longitudinal electives. For course listing, time and content description consult the pathology section in the appropriate elective catalogs.

**Advanced Accelerated Program in Pathology (AAPP).** The AAPP admitted the first group of students in the fall of 1975 in an effort to permit early specialization and target-oriented education. The track in pathology begins in the freshman year, makes use of all the resources of the Department of Pathology, and is oriented toward a training in the specialty of pathology. Five students are admitted during their first year. They are required to fulfill all the requirements of the medical school program; however, they are not pledged to seek a career in the field of pathology. The training in the track program should provide the student with the knowledge of a one-year residency program. Time spent in training within the track program can count towards elective or residency time.

## GRADUATE PROGRAM

**MS or PhD Degree.** The graduate program offers training and instruction in modern experimental pathology. Particular fields of interest presented are: instruction in pathological biochemistry, electron microscopy, immunopathology, histochemistry, tissue culture, physiology and the various fields generally considered within clinical pathology.

**MD-PhD Combined.** Interested students should consult the department chairperson. For details of course offerings and admission requirements, see the pathology section in the Graduate School Catalog.



## PEDIATRICS

The Department of Pediatrics plays a vital and dynamic role in the educational process at the undergraduate (medical school), graduate (residency) and postgraduate (continuing education) levels. In the education role, the department prepares the present and future physician to provide quality comprehensive medical care to infants, children and adolescents, now and in the future.

The department has broadened its concept of the children's physician to include not only the important generalist in pediatrics, but also the basic scientist, the health educator, the subspecialist, the medical center academician and the community health planner. Above all, the physician for children must be a sensitive human being which is summed up in the credo — Love, Concern and Excellence. The department's effort is to make the educational program meet the needs of the individual physician as well as to provide the best possible services for children.

A clinical clerkship experience is offered with in-patients, full-term infants and ambulatory patients in addition to a wide variety of elective experiences including basic research, clinical research, in-patient and ambulatory clerkships, preceptorships, subspecialty programs and community pediatrics.

### UNDERGRADUATE MEDICAL PROGRAM

#### *First Year*

**PEDI 510. Introduction to Pediatrics.** Presentations illustrating aspects of growth and development of infants, children and adolescents. The course also includes the approach to children in these age groups as well as a demonstration on how to perform a physical examination of a child in each age group. These are followed by small group discussions.

#### *Second Year*

**PEDI 520. Pediatric Physical Diagnosis.** Individualized experience in the performing of pediatric physical examinations and history-taking under the direct supervision of a preceptor is offered.

#### *Third Year*

**PEDI 530. Clerkship.** Students are assigned as clinical clerks for a period of six weeks at the University of Maryland Hospital, Mercy Hospital, Union Memorial Hospital, Sinai Hospital or South Baltimore General Hospital. In each of the aforementioned teaching areas they are given clinical exposure and experience on the pediatric wards, in the pediatric ambulatory area and in the nursery area.

Regularly scheduled conferences are held covering x-ray diagnosis, cardiology, journal reviews, chart conference, neonatal mortality, case discussions and metabolic diseases. Small group tutorial discussions cover concepts of the pathophysiology and therapeutic management of pediatric patients. The total impact of the illness on the child and family complex is emphasized and the student is encouraged to become familiar with all aspects of pediatric practice.

#### *Fourth Year*

**PEDI 540. Pediatric Electives.** A variety of elective experiences are available including nursery, ward and ambulatory student internships, laboratory research experiences, and subspecialty experiences. Please refer to the medical school electives catalog.

#### *Minimester Electives*

The department offers a wide range of experiences that include basic science, clinical and laboratory research activities. For a complete listing, please refer to the medical school minimester catalog.

## PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

The department's objectives are to teach undergraduate medical students those principles underlying the distribution, metabolism, mechanism of action and toxicity of therapeutic agents

or substances. At the graduate level, three areas of studies are incorporated: 1) training in the various aspects of pharmacology; 2) increasing effectiveness of drugs used in treatment of human diseases; 3) researching to better understand drug action.

The Graduate School Catalog lists a number of graduate courses and electives offered to medical students. Arrangements for combined MD-PhD training are made on an individual basis.

## UNDERGRADUATE MEDICAL PROGRAM

### *Second Year*

**MCBP 520. Medical Pharmacology.** The pharmacological basic for therapeutics is presented with an emphasis on the mechanism of drug action.

### *Minimester Electives*

The department offers a variety of courses during the minimester portion of the curriculum. Consult the electives catalog for further details.

## PHYSIOLOGY

The Department of Physiology provides lecture, laboratory and seminar courses in the principles of mammalian physiology to students of medicine and advanced courses in special areas of physiology to graduate students, fellows and interested medical students.

## UNDERGRADUATE MEDICAL PROGRAM

### *First Year*

**MPHY 501. Principles of Physiology and Biophysics.** Lectures, laboratory and conferences during the spring semester. A course in the principles of human physiology and biophysics covering cellular, cardiovascular, renal, respiratory, gastrointestinal and endocrine physiology. Conference periods are used for clinical correlations and small group discussions. Under some circumstances, a limited number of students may elect an alternative program of laboratory work and or library reading with written reports and conferences.

**MANA 513. Neurological Sciences.** *See Anatomy.*

**Other Opportunities.** A variety of minimester courses and advanced seminars or research in special areas of physiology are open to interested students during the elective period or other free time. Combined MD-PhD programs, requiring additional course work and original research, are offered for highly qualified medical students.

### *Fourth Year*

**MPHY 542. Seminars in Physiology Elective.** Advanced graduate seminars in selected fields of physiology (e.g., cardiovascular, renal, endocrine and neural) are offered, usually two each semester.

**MPHY 548. Research in Physiology Elective.** In selected fields.

## PRIMARY CARE PROGRAM

At the University of Maryland, the concept of the primary care physician is that of an individual who is: 1) skilled in multiple facets of health/illness care, both acute and chronic; 2) an educator of peers, pupils and public; 3) interested in the impact of health care delivery and able to effectively evaluate his or her own efforts as well as the efforts of others in this endeavor; 4) able to perform effectively in management decision-making and planning; and 5) an active participant in the affairs of the community.

It is the goal of the Primary Care Program to prepare such a physician, beginning with primary care elective experiences during the senior year and continuing with an extensive graduate medical education program.

The Primary Care Program became an independent division of the School of Medicine early in 1976. This expanded program has responsibility and direct authority for planning, implement-

ing and monitoring new primary health care delivery settings. It is an integral part of the overall campus thrust in primary health care.

Essential to the education and training experience in all of the primary care graduate programs is the focus on a true interprofessional relationship. Residents have the unique experience of being associated with a team of health care professional educators, practitioners and research workers throughout the program. This faculty includes primary care internists and pediatricians, primary care nurse practitioners, clinical pharmacists, psychiatrists, nurse educators, psychologists, and social workers.

## **UNDERGRADUATE MEDICAL PROGRAM**

Selected ambulatory primary care elective experiences are offered as part of the senior year ambulatory rotations in internal medicine and pediatrics. For further information, consult the Medicine and Pediatrics sections of the electives catalog. These primary care elective experiences occur both on campus and within the Area Health Education Center (AHEC) program off campus (see Resources section of this catalog).

## **GRADUATE PROGRAM**

**Internal Medicine.** A graduate medical education program in Primary Care Internal Medicine was initiated in July 1977. The goal of the residency program is the education and training of general internists who can be evaluated against the most stringent standards of quality in terms of their function as complete physicians. Our intent is to prepare these physicians for a new and expanded health care delivery role, and as innovators in the development of improved health care services. To meet this goal, a wide-ranging three year program has been implemented which allows for sufficient curriculum flexibility to meet individual needs.

The Primary Care Residency Program meets the requirements for certification by the American Board of Internal Medicine, as well as providing a broad medical background and experiences in management, planning, teaching, and evaluation of health care.

**Pediatric Primary Care.** In July 1978, a graduate medical education program in Pediatric Primary Care was begun. The program has a two-fold thrust — the education of pediatric residents in all areas that affect child life and health, combined with personal growth and the pursuit of wisdom, judgment and values. The curriculum is planned to reflect the child's needs within the context of family, school, neighborhood and community. Emphasis is placed on the understanding, humanity, and compassion of the physician in practice as well as the science and technology of medicine.

Specialty clinics within the hospital and other resources are utilized on an elective/required basis, dependent upon the resident's interests and needs. Combined experiences offer the resident longitudinal and comprehensive ambulatory and in-patient care, with an emphasis on the preventive, psychosocial and behavioral aspects of service.

The training program meets the requirements for certification by the American Board of Pediatrics.

## **PSYCHIATRY**

The goal of undergraduate psychiatric education is an understanding of and an appreciation for the application of behavioral and psychiatric principles in patient care and health maintenance through an exposure to a progressive sequence of intellectual stimulations, clinical experiences, and appropriate contexts of professional socialization. More specifically, the curriculum aims to assist the students to: 1) acquire a foundation of knowledge regarding the psychological, sociological and humanistic aspects of the practice of medicine based on the study of the behavioral and social sciences and clinical psychiatry; 2) master basic interpersonal and psychiatric skills relevant to the management of patients with medical and/or emotional illness; 3) emulate attitudes and values which enhance the professional roles and practices of a physician *vis-a-vis* his or her patients and the community.

The curriculum is divided into a Core Program which consists of required courses offered during the first three years of medical education and an Electives Program which provides a



variety of courses (clinical, didactic and research) for the student who is interested in furthering his knowledge and experience in some aspect of the theory and practice of psychiatry and its related fields. These elective courses are offered during the January and June minimesters of the preclinical years and in the senior year. The four-year Combined Accelerated Program in Psychiatry (CAPP) is offered as an advanced elective track to selected students with a special interest in the behavioral sciences.

## CORE PROGRAM

### *First Year*

**PSYH 510. Behavioral and Social Sciences.** (90 hours). This interdisciplinary course provides a context for the integration of diverse behavioral science contributions which are relevant to the understanding of human behavior. It is presented jointly by the Department of Psychiatry, the Department of Epidemiology and Preventive Medicine, and the Department of Pediatrics, and is coordinated by an interdepartmental committee. Its emphasis is on the emergence of a broader concept of life sciences that constitute medicine — one that views the human organism holistically as a dynamic biological system whose inherent aspects of structure, organization, ontogeny and functioning are determined or influenced by developmental, intrapsychic, interpersonal and socio-cultural factors. The course runs through both semesters (three hours per week).

*First Semester: Dimensions of Behavior.* This section provides basic introductory concepts in the field of behavioral and social sciences, and is primarily designed to meet the needs of those students whose premedical curriculum did not allow sufficient exposure to these sciences. The central theme is man as an individual viewed from a developmental, intrapersonal, interpersonal and humanistic viewpoint, and as he emerges through the vicissitudes of the family life cycle. These basic dimensions of behavior are presented in the following course units: 1) Humanistic Medicine; 2) Human Growth and Development; 3) Personality and Behavior; 4) Human Interaction. These are lecture demonstrations coupled with small group discussions.

*Second Semester: Behavioral and Social Sciences and the Practice of Medicine.* This section views man in his transactions with the environment and in the context of larger systems, including social, governmental and institutional. Its major focus is on the psychological, interpersonal, and sociocultural aspects of illness and health care. Course units include: 1) Psychosomatic Aspects of Illness; 2) Social, Cultural and Organizational Aspects of Health Care; and 3) Physician-Patient Interaction. The pedagogic approach is based on lecture-demonstrations and patient interviews as well as small group discussions.

### *Second Year*

The goal of sophomore psychiatry is to provide students with a foundation of clinical knowledge in the area of psychopathology and psychiatric diagnosis as a preparation for their junior clerkship in psychiatry. This sequence is organized around two courses as follows:

**Practicum in Psychiatric Evaluation.** This course is offered as part of the Year II ICP, and consists of six two-hour sessions per student rotation. About 30 students rotate in this course every six weeks. The objectives of the course include psychiatric interviewing techniques and psychiatric history taking, mental status examination, differential diagnosis and development of psychodynamic understanding. Its format consists of small group sessions involving live patient interviews.

**PSYCH 520. Psychopathology.** (60 hours). In the first semester the focus is on the basic aspects of psychopathology, with an emphasis on the multi-level contributions to the pathogenesis of disordered behavior. It also involves symptom identification and their clustering into syndromes, and psychiatric nomenclature. The second semester provides clinical knowledge in the area of psychiatric nosology, including clinical description of diagnostic entities as well as etiology, pathogenesis, epidemiology, course, prevention, and treatment of each of these disorders. The pedagogic techniques consist of a brief, 20-minute lecture on the subject, followed or preceded by a clinical demonstration. Psychopathology is demonstrated by films, videotapes, and interviews with live patients.

### *Clinical Years*

**PSYCH 530. Psychiatric Clinical Clerkship.** (six weeks). Clerkship consists of full-time assignment to one of the following hospital facilities: 1) Institute of Psychiatry and Human Behavior; 2) Sheppard and Enoch Pratt Hospital; 3) Sinai Hospital; 4) U.S. Public Health Service Hospital; 5) Inner City Community Mental Health Center; and 6) Maryland General Hospital. All students are required to attend several didactic sessions on Tuesday and Thursday mornings, including: 1) Review of Clinical Psychiatry, 2) Review of Child Psychiatry, 3) Alcoholism and Drug Abuse, 4) Patient Management, 5) Psychological Testing, and 6) Liaison Seminar. In addition, students are given the option to take an elective part-time experience in child psychiatry, ranging in length from half day per week to two days per week. Students selecting a child psychiatry option have proportionally less time in adult services. The following clinical facilities are used for child psychiatry electives: Child Psychiatry Clinic, School Day Care and Community Child Psychiatry.

*Institute of Psychiatry and Human Behavior.* More than sixty per cent of the students are trained in this facility. The clerkship involves a concurrent assignment to the adult in-patient division, ambulatory care division, and liaison psychiatry division. The in-patient experience is structured around the assumption of responsibility for the work-up and treatment of a newly admitted patient under the supervision of a ward administrator and a resident preceptor. The student participates in staff meetings, milieu therapy activities, psychodrama sessions, and presents his or her patient in a clinical case conference. The out-patient experience involves intensively supervised work with patients in the brief therapy clinic and open clinic supplemented by a students' clinical case conference. Concurrent liaison division activities include supervised work with patients in the general hospital.

*Sheppard and Enoch Pratt Hospital.* Three to four students per rotation. It focuses primarily on supervised work with hospitalized patients and includes participation in milieu therapy, group therapy and ongoing staff conferences.

*Sinai Hospital.* Two students per rotation. It involves a concurrent exposure to hospitalized psychiatric patients, consultative psychiatry, crisis clinic and out-patient clinic. Students also attend ongoing seminars and conferences.

*U.S. Public Health Service Hospital.* Two students per rotation. It combines in-patient and out-patient experience, under close supervision. Students also attend ongoing conferences.

*Inner City Community Mental Health Center.* Four students per rotation. It consists of assignments to emergency room, in-patient service and satellite clinics.

*Maryland General Hospital.* Two students per rotation. It involves in-patient experience as well as out-patient assignment at St. Agnes Hospital Psychiatry Clinic.

**Interdepartmental Collaborative Teaching.** Behavioral science teaching in certain specialized areas is contributed by several departments, including the Department of Psychiatry, within the interdisciplinary sequence Introduction to Clinical Practice (ICP). In the clinical years, the Liaison Division of the Department of Psychiatry conducts collaborative teaching in surgery, medicine, and ambulatory care. The Division of Child and Adolescent Psychiatry collaborates closely in teaching, research and patient care with the Department of Pediatrics.

### **ELECTIVES PROGRAM**

The Department of Psychiatry offers elective courses in all four years of the medical curriculum. Elective courses scheduled in the Year I and Year II minimesters (January and June) span a variety of topics in behavioral sciences, including: human development, psychophysiology, medical sociology and anthropology, experimental psychopathology, psychoanalytic theory, and psychiatric epidemiology. Elective courses offered during the clinical years include: brief psychotherapy, psychiatry for the medical practitioner, community psychiatry, study of violent behavior, out-patient child psychiatry, pediatric psychiatric consultation, preventive and community psychiatry for children, alcoholism and drug addiction, family dynamics and treatment, medical hypnosis, human sexual behavior, behavior modification, theory and research in psychosomatic medicine, problems in the delivery of health care, forensic psychiatry, and in-patient psychiatry electives. In addition, the department offers elective courses in various research areas, as well as individual clinical preceptorships.



**Combined Accelerated Program in Psychiatry (CAPP).** The CAPP was initiated in 1970 by the Department of Psychiatry as a major effort to explore new approaches to medical education. This behavioral science-psychiatry track allows selected students to enroll concurrently in a basic psychiatric-specialty training, beginning in the freshman year and continuing through the four years of medical school. In addition to participating in the psychiatry program, students are required to fulfill all of the requirements of a standard four-year medical curriculum. In admitting students to the program, there is no requirement for any pledge of a career interest in psychiatry. Students are selected from among applicants with an interest in the social and behavioral aspects of medicine. Twelve students are admitted to the program per year. Currently, over 100 students have entered the program. The track provides, from the first month of the freshman year, an unfolding progression of combined didactic and clinical experiences in the behavioral sciences and in clinical psychiatry. The completion of this four-year program enables the student to graduate from medical school with a foundation of knowledge and skills that is envisioned to be at least equivalent to that provided by one year of traditional residency training in psychiatry. Students in the program graduate from the medical school six months earlier than the rest of their class by being credited six months elective time in psychiatry. During the remaining six months, those interested in careers other than psychiatry are required to take a six-month internship in psychiatry specifically designed to meet their practice needs in the field of their choice. On the other hand, those committed to a career in psychiatry are required to take a six-month internship in internal medicine.

**Fellowships.** This eight-week program, supported by the National Institute of Mental Health and medical school traineeships, is offered each summer to a dozen students. Students are assigned to the various clinical facilities of the Institute of Psychiatry and Human Behavior and participate in an intensive program which includes closely supervised clinical work, conferences and seminars, and involvement in individual clinical and research projects.

## **RADIATION THERAPY**

Radiation Therapy including Radiological Physics, Radiobiology, and Radiation Oncology became a separate department at the University of Maryland in 1978. Previously, it had existed as a division of Radiology, but increasing knowledge in all the areas of radiological science lead to its recognition as a separate, integrated specialty.

The department offers the medical student a broad exposure to the principles of radiation oncology through lectures, conferences and attendance at new patient and follow-up clinics. Emphasis is placed on the indications for and use of ionizing radiation in the management of patients with cancer.

## **UNDERGRADUATE MEDICAL PROGRAM**

### *Third Year*

During a three-week rotation through Radiology, Radiation Therapy and Nuclear Medicine, the students attend Radiation Therapy departmental teaching rounds and clinics. They also receive a series of lectures designed especially to familiarize them with the principles of the specialty.

### *Fourth Year*

**Elective in Radiation Therapy.** This elective allows the students interested in pursuing radiation therapy as a career an opportunity to participate as a member of the radiation oncology team. They will become familiarized with the evaluation, management and follow-up of patients who have cancer including treatment planning, dosimetry and the use of interstitial and intracavitary sources of radionuclides.

## **GRADUATE PROGRAM**

An approved three-year residency program in therapeutic radiology is offered at University of Maryland Hospital. Teaching is carried out through didactic lectures, clinics and numerous teaching conferences with emphasis on patient care under the supervision of a full-time staff. Elective time is spent in related oncological specialties to promote the multidisciplinary concept of management of patients with cancer.



## **REHABILITATION MEDICINE**

Rehabilitation Medicine is a broad term referring to the medical treatment and management of patients with disability due to neuromuscular and musculoskeletal impairments and the associated psychosocial and vocational elements. Physical medicine and rehabilitation is the medical specialty most intimately involved with "rehabilitation medicine" and concentrates on specific diagnostic and therapeutic skills required in the comprehensive evaluation of impairment and the application of appropriate therapy for its amelioration or the adaptation of the individual to the impairment.

The department has a multidiscipline structure containing appropriate elements of the allied health disciplines in addition to the specialist in physical medicine and rehabilitation (physiatrist). These are occupational therapy, physical therapy, speech pathology, social work, and vocational counseling. The department provides diagnostic, evaluative, therapeutic, and management services for the rehabilitation of patients of all ages who have in common some disorder of mobility. Its functions are frequently complementary to the activities of the other medical discipline, and a bed service is available for those patients requiring in-hospital rehabilitation.

### **UNDERGRADUATE MEDICAL PROGRAM**

The department participates in several interdepartmental courses; namely, Introduction to Clinical Practice in the freshman and sophomore years, and Ambulatory Care in the senior year.

Elective clerkships in clinical rehabilitation medicine are offered in the sophomore, junior, and senior years, with the participation of Sinai Hospital of Baltimore, and the Veterans Administration Hospital at Fort Howard, Maryland.

### **GRADUATE STUDIES**

An approved three-year residency program in physical medicine and rehabilitation is offered for those physicians wishing to specialize in this field.

## **SURGERY**

The Department of Surgery is composed of six divisions: general surgery, neurosurgery, orthopaedics, otolaryngology, thoracic and cardiovascular, and urology. The faculty of the various divisions participate in the teaching of anatomy, pharmacology, physiology and introduction to clinical medicine, but do not offer formal courses until students enter their clinical clerkships. During this 12-week period, time is divided between general surgery and the subspecialties of orthopaedics, otolaryngology, and urology. Students may have clerkships at the University of Maryland Hospital or at one or more affiliated hospitals (Mercy, Maryland General, Baltimore City, St. Agnes, South Baltimore General).

Electives in surgical research and summer fellowships are available to students in all four years. More extensive clinical experience with greater patient responsibility is offered by all divisions to students as electives in their fourth year.

The surgical clerkships give the student exposure to those disease entities which can or should be treated by operative intervention and to those physiologic and metabolic alterations which arise from such intervention. Students are expected to gain experience in recognition of conditions which will require surgical consultation and gain appreciation of wound care as well as familiarity with basic emergency procedures. This should enable the future internist, pediatrician or psychiatrist to discuss with his patient the probable treatment and prognosis of various surgical diseases, as well as giving students the opportunity to explore various surgical disciplines and to participate fully in the daily activities of surgical teams.

Graduates of approved medical schools will be considered for residencies in general surgery, neurological surgery, orthopaedics, otolaryngology, thoracic and cardiovascular, and urologic surgery.

## Division of General Surgery

### UNDERGRADUATE MEDICAL PROGRAM

#### *Third Year*

**GSUR 530.** The teaching of general surgery is conducted in the in-patient environment of the University of Maryland, Baltimore City, Maryland General and Mercy hospitals. Students are divided into groups of two or three for continuous assignment to individual patient areas. Upon admission to the service, selected patients are assigned to individual students who are expected to record a complete history, the results of a physical examination and required laboratory studies. A differential diagnosis, final diagnosis and recommendations for therapy must be included. Operation room participation is encouraged but not required.

The program is designed to give the student a broad overview of the fundamentals of the discipline of surgery in a clinical environment and includes contact with a wide variety of adult and pediatric patients. This includes patients with infections, neoplasms, trauma, endocrine disorders, vascular disease, gastrointestinal problems, metabolic disorders and congenital defects often requiring extensive medical evaluation followed usually by surgical therapy.

The student is responsible for core reading material which is identical regardless of hospital assignment. Emphasis throughout the course is placed on problem solving through correlation of basic science information with clinical diagnosis and management.

#### *Fourth Year*

**GSUR 541. Elective Clerkships.** This elective allows the student to participate as an integral member of a surgical care team. Students are assigned to various services at University of Maryland Hospital in oncology, gastrointestinal surgery, vascular surgery, or pediatric surgery.

Surgical ward clerkships are available at the following affiliated hospitals: Maryland General, Mercy, Baltimore City, St. Agnes, Prince George's General, and York (Pa.).

A clinical clerkship is offered at the U.S. Public Health Service Hospital.

At Baltimore City Hospitals or York (Pa.) Hospital, electives are offered in the surgical emergency room and plastic and reconstructive surgery.

Consult the medical school electives catalog for course details.

### GRADUATE AND POSTGRADUATE PROGRAMS

A fully-accredited residency is offered at the University of Maryland Hospital and one affiliated hospital, Mercy. Additionally, research fellowships are available; and, for the practicing physician, short refresher courses are given.

## Division of Neurological Surgery

### UNDERGRADUATE MEDICAL PROGRAM

#### *First and Second Years*

In the first year, the staff participates in a combined program with the Department of Neurology in which correlative lectures and demonstrations are given and the fundamentals of the neurological examination are demonstrated. During the second year, a similar program is carried out that allows students to examine patients, followed by faculty review.

#### *Third Year*

In the third year, each student spends three weeks on a combined medical and surgical neurology rotation in which lectures are combined with clinical experiences gained on the two services. Opportunities are provided for observing neurosurgical procedures and participating in all the functions of the service.

#### *Fourth Year*

A fourth year elective is available in clinical neurosurgery in which the participation of the student is deepened, both in the operating room and in the daily performance of patient care.

A preceptorship in pediatric neurosurgery is also available. Finally, students interested in microneurosurgery, the pathophysiology of spinal trauma and neurophysiology are welcome in the research laboratories of the division.

## GRADUATE STUDIES

Rotations are offered to general surgery residents from the University and affiliated hospitals. A training program in neurological surgery is offered to graduates of accredited medical schools who have completed one year of surgical residency. The five-year program is accredited by the American Board of Neurological Surgery.

## Division of Orthopaedic Surgery

### UNDERGRADUATE MEDICAL PROGRAM

#### *First and Second Year*

**Electives.** Freshmen or sophomore medical students may develop minimester electives in clinical orthopaedics or musculoskeletal research with individual members of the orthopaedic surgical faculty. Projects include anatomic dissections with research or clinical value, participation in ongoing projects at the Maryland Orthopaedic Research Laboratories, or clinical experiences emphasizing joint reconstruction, major trauma, or spinal injury surgery.

In addition to these electives, the Division of Orthopaedic Surgery provides a lecture series for students in conjunction with the Introduction to Clinical Practice program.

#### *Third Year*

**OSUR 530. Orthopaedic Surgery, University of Maryland Hospital.** The course is designed to teach the general principles of orthopaedic surgery and introduce medical students to fracture recognition and management, reconstructive surgery of the musculoskeletal system, and to common out-patient conditions affecting the musculoskeletal system. Under supervision, students participate in patient diagnosis and treatment as well as surgery. Daily student conferences and didactic sessions are held in addition to the division's intensive academic program.

**Orthopaedic Surgery, Baltimore City Hospitals.** Clinically-oriented course in the principles and techniques of orthopaedic surgery is offered.

#### *Fourth Year*

**Electives.** One senior student is selected each month for an internship-level clinical and surgical experience on the university orthopaedic trauma and spinal injury services. The student participates in the ten weekly orthopaedic conferences and seminars. In addition, a clinical elective is offered in pediatric orthopaedics at Kernan Hospital for Crippled Children.

## GRADUATE STUDIES

The Division of Orthopaedic Surgery offers an accredited four-year residency program. Clinical and surgical experiences are achieved on the teaching, private, and hand services in University of Maryland Hospital, the major trauma and spinal injury services in the Maryland Institute for Emergency Medicine, and on the pediatric orthopaedic service at Kernan Hospital. An intensive academic program and research involvement complement this clinical experience.

## Division of Otolaryngology

The division provides an introduction to the diseases of the head and neck. A wealth of opportunity is provided to the student who will be concerned with communication disability and the clinical diseases where hearing, speech and language are of diagnostic significance.

The staff with the assistance of the postdoctoral trainees provide each student by example, lecture and direct tutorial instruction, the essentials with which to enter residency in such fields as family practice, pediatrics, general surgery, neurosurgery, neurology, psychiatry and otolaryngology.



## UNDERGRADUATE MEDICAL PROGRAM

### *First and Second Years*

Introduction to the diseases of the head and neck is begun through interdepartmental arrangement with anatomy and physiology in the first year. Introduction to Clinical Practice provides freshman students in second semester with six hours of experience in the techniques of examination of ears, nose and throat. During the second year, six hours of experience throughout the year allows more advanced examination of the head and neck.

### *Third Year*

Third year students are introduced to the care of patients with diseases of the ears, nose and throat. One hour of basic audiological technique is presented to each group by an audiologist and one hour of introductory speech pathology is presented by a speech pathologist.

Fundamental elements of otolaryngologic diagnosis and therapy are stressed in this program of approximately 14 days.

### *Fourth Year*

**Electives.** Electives are offered in the following areas: basic clinical otolaryngology, advanced otolaryngology, communication disorders, investigation in otolaryngology, physiology of hearing and surgical otolaryngology. For detailed course descriptions, consult the medical school electives catalog.

## GRADUATE STUDIES

Resident training in otolaryngology is open to three residents in each of the four years of the American Board of Otolaryngology-approved program.



## Division of Thoracic and Cardiovascular Surgery

### UNDERGRADUATE MEDICAL PROGRAM

#### *Fourth Year*

**TSUR 541. Externship in Thoracic Surgery Elective.** Its main purpose is to present the basic pathophysiological principles of thoracic and cardiovascular surgery, a highly specialized and demanding discipline, in a clinical setting. The student becomes a member of one of the teams on the service and serves in the capacity of an intern. Duration of the course is four weeks with a maximum of 12 weeks available.

### GRADUATE STUDIES

The two-year residency program which admits two trainees each year is approved by the American Board of Thoracic Surgery. Applicants must be eligible for the American Board of Surgery examination at the start of the program. Residents are given an opportunity to assist and then perform all types of cardiothoracic operative procedures, including cardiopulmonary bypass, in a program designed to ensure progressive experience.

## Division of Urology

The urologic curriculum is designed to introduce urologic principles as they relate to preservation of renal function, cause and cure of urinary tract infection, maintenance of a normal or acceptable voiding pattern, and disorders of the male reproductive system.

### UNDERGRADUATE MEDICAL PROGRAM

#### *Second Year*

Lectures and demonstrations on disorders of urine transport are given in conjunction with the Division of Nephrology and the Department of Pathology during two weeks of instruction on the renal system.

#### *Third Year*

**USUR 530. Junior Clerkship.** Five to seven students are assigned to the division for 14 days at the University of Maryland Hospital. Each is asked to review and follow a patient with a different urologic problem and to present this patient to the group and a faculty member. Daily rounds and conferences are held. The students observe and participate in diagnostic and operative procedures and attend the out-patient clinic. Each student receives a list of study questions, some of which are reviewed at faculty sessions each day. Outlines for each of the nine lectures are given to each student.

#### *Fourth Year*

**Electives.** Students may elect an externship in urology at University of Maryland, Sinai, Maryland General and York (Pa.) hospitals or at Baltimore City Hospitals.

### GRADUATE STUDIES

The residency program consists of three years of training following a year as an assistant resident in surgery. Each year, three are appointed and become co-residents at the end of the third year if progress in training has been satisfactory.

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# MEDICAL TECHNOLOGY PROGRAM

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## PROGRAM

The University of Maryland offers a baccalaureate degree program in medical technology to be completed in four academic years. Students who have been accepted into the Medical Technology Program study during the junior and senior years at the School of Medicine and University of Maryland in Baltimore. The program fulfills requirements set forth by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and the Council on Medical Education of the American Medical Association (AMA). Upon successful completion of the program, graduates are eligible to take the medical technology national certification examination given by the Board of Registry of the American Society for Clinical Pathology (ASCP).

## APPLICATION AND ADMISSION

Applicants must meet all admission requirements of the University of Maryland. At least three years of college preparatory mathematics and science, including chemistry and physics, are strongly recommended.

Applications to the professional school will not be considered until the first semester of the sophomore year has been completed. Applicants must have a 2.5 overall grade point average (2.0 in science) and must have taken the Allied Health Professions Test. The applicant must submit an Undergraduate Professional Application for Admission. Requests for application should be submitted to: The Office of Admissions and Registrations, University of Maryland at Baltimore, Room 132, Howard Hall, 660 W. Redwood Street, Baltimore, Maryland 21201. Check with the Program in Medical Technology for application deadlines.

## PREPROFESSIONAL CURRICULUM

Students must complete at least 60 semester hours of academic preparation, exclusive of health and physical education, before beginning the professional segment of the Medical Technology Program. The following curriculum guide, which fulfills University of Maryland and National Accrediting Agency for Clinical Laboratory Science requirements, will assist the student in planning the first two years of study.

### General Education Requirements

- A. Life sciences, agriculture, mathematics, and science  
Satisfied by Medical Technology Program requirements
- B. Behavior and social sciences (6 semester hours)  
Select any six hours from listed division courses.
- C. Arts and humanities (12 semester hours)  
English (6) one course must be Composition (MTP requirement)  
Speech (3) MTP requirement  
Select an additional three hours from listed divisional courses.  
NOTE: Credit for foreign language will be given only upon completion of advanced course or one full year of foreign language.

### Program in Medical Technology Requirements

- A. Mathematics (6 semester hours)  
Introductory College Math (3,3): logic, sets counting, probability, sequences, elementary algebraic and transcendental functions and their geometric representations; linear equations, vectors, matrices; or equivalent;  
OR  
Introductory Analysis (3): real numbers, functions, coordinate systems; trigonometric functions and plane analytic geometry.  
*Recommended:* College level Statistics
- B. Chemistry (16 semester hours)  
Inorganic Chemistry with lab required (4)  
Biochemistry with lab required (4)  
Select an additional eight hours from listed divisional courses.

*Recommended:* Organic Chemistry, Physical and Analytical Chemistry, Quantitative Analysis

NOTE: If a three credit Biochemistry course is taken, another 4 hours of Chemistry with lab is required in order to provide a total of at least 16 hours of chemistry.

C. Biology (8 semester hours)

General Biology with lab required (4)

General Microbiology with lab required (4)

Select an additional four (4) hours from the following:

Genetics, Comparative Vertebrate Morphology,

Cellular Biology

NOTE: Anatomy and Physiology, Pathogenic Microbiology, and Immunology are a portion of the junior year of the Medical Technology Program.

D. Electives (to complete the 60 semester hour requirement)

*Recommended:* Physics, Philosophy, Literature, Psychology, and Sociology

## PROFESSIONAL CURRICULUM

Students are accepted into the Medical Technology Program on a competitive basis. Successful completion of 60 semester hours does not guarantee admission to the professional segment of the program.

The professional segment is administered by the University of Maryland School of Medicine at the Baltimore Campus. Students are admitted once a year in September. Full-time attendance is required during the junior and senior year. Members of the medical school faculty are closely involved in the Medical Technology Program.

### UNDERGRADUATE MEDICAL TECHNOLOGY PROGRAM

**MEDT 301. Laboratory Organization and Management (1).** *Fall, Junior Year.* The course consists of an overview of the medical technology profession including the accreditation, licensure and certifying procedures. Laboratory safety is stressed and includes a standard Red Cross first aid course. A unit on the problems of the patient and effective interactions with the patient is included. Professional responsibility and ethics are integrated throughout MEDT 301 and MEDT 302.

**MEDT 302. Laboratory Organization and Management (1).** *Spring, Junior Year.* The extended responsibilities of medical technologists in clinical laboratories, research facilities and educational institutions require an understanding of organizational structure and management principles. While such skills become increasingly important as one advances in the profession, meeting the course objectives will enable the career entry technologist to function more effectively with colleagues in the institutional environment.

**MANA 311-312. Anatomy and Physiology (4).** *Fall and Spring, Junior Year.* The basic aim of these courses will be to develop an understanding of the human body and its behavior and to give a sound background in embryology, morphology, physiology, and elementary pathology. The theme of the courses will deal with homeostasis and mechanisms that serve to maintain it. The first semester deals with anatomy and physiology at the cellular and tissue level. The second semester will involve functional anatomy of organs and systems. Emphasis is on the interrelationships of all parts of the body. Appropriate laboratories will be incorporated into the sequence.

**MEDT 321. Clinical Microscopy (2).** *Fall, Junior Year.* This course involves microscopic study of all formed elements found in body fluids, normal and abnormal. Methods of examination will include light, phase, darkfield, fluorescent and polarized systems in addition to appropriate histo-chemical basis for microscopic study.

**MEDT 355. Clinical Chemistry I (2).** *Fall, Junior Year.* This course provides the necessary background material and information to enable the student to function in the modern clinical

chemistry laboratory. The series of academic lectures is designed to teach the biochemical basis for determinations required in the diagnosis of disease. Normal and abnormal physiology are related to diseases and in discussion of each condition, those tests helpful in diagnosis are emphasized. The course consists of a series of laboratories designed to provide an intensive study of the qualitative and quantitative principles and procedures utilized in the chemistry laboratory.

**MEDT 356. Clinical Chemistry II (3).** *Spring, Junior Year.* This course provides the necessary background material and information to enable the student to function in the modern clinical chemistry laboratory. The series of academic lectures is designed to teach the biochemical basis for determinations required in the diagnosis of disease. Normal and abnormal physiology are related to diseases and in discussion of each condition, those tests helpful in diagnosis are emphasized. The course consists of a series of laboratories designed to provide an intensive study of the qualitative and quantitative principles and procedures utilized in the chemistry laboratory.

**MEDT 331. Hematology I (3).** *Spring, Junior Year.* This course is an introduction to the hematopoietic and coagulation mechanisms. It involves a study of techniques used in clinical hematology laboratories. Testing is performed in a simulated clinical laboratory setting on normal samples. Lecture and laboratory topics include the following: origin, development, and function of blood cells, methods of studying blood, normal physiology, and metabolism of blood cells, normal blood coagulation, and maintenance of hemostasis.

**MEDT 374. Clinical Microbiology I (4).** *Spring, Junior Year.* The scope of this course is to acquaint the student with current laboratory procedures commonly employed in the clinical environment to isolate and identify pathogenic organisms. Didactic sessions will be devoted to the biologic and clinical basis of infectious diseases whereas laboratory sessions will be based upon specimen pathogen analysis.

**MEDT 383. Statistics and Quality Control (1).** *Fall, Junior Year.* This course is a study of statistics, population, and quality control in allied health disciplines. An introduction to basic statistical concepts such as population, sample, null hypothesis, and confidence limits. Ways to represent frequency distributions (histogram, frequency table), measures of location (mean, median, mode, percentile), and dispersion in the frequency distribution (variance, standard deviation).

**MEDT 384. Electronics and Instrumentation (1).** *Fall, Junior Year.* This course is designed to acquaint students with the basic principles of electronics and instrumentation used in health care facilities. The lectures deal with basic electronic principles and instrumentation to include spectrophotometers, visible and ultraviolet, flame photometers, fluorometers, osmometers and thin layer and gas chromatographic systems.

**MEDT 401. Fundamentals of Pathology (2).** *Fall, Senior Year.* This course will deal with disease, pathogenesis, and discussion of representative diseases in each etiological category, diagnostic procedures used in various diseases, and pathologic rationale related to laboratory testing. These discussions will be condensed and concise presentations.

**MEDT 403. Research Elective.** This course is designed to give the student the opportunity to devote one full week in an area in which he has a special interest. This may be clinically or research oriented. The student will be under direct supervision of a didactic or clinical instructor and will be requested to prepare a report of his/her achievement.

**MEDT 432. Hematology II (3).** *Fall, Senior Year.* This is an advanced course in Hematology designed for senior medical technology students. Emphasis is placed on diseases and disorders pertaining to abnormal hematology. The course overviews normal hematology followed by in-depth theoretical and practical concentration in disease mechanisms. The following are considered: disorders associated with the anemias, polycythemia, leukemia and leukemoid reactions, plasma cell and plasma protein abnormalities, lupus erythematosus, theory and mechanism of abnormal hemostasis, and associated diseases. Testing is performed in a simulated clinical laboratory setting on abnormal samples. Correlation of clinical studies with abnormal laboratory findings is presented by case studies.



**MEDT 452. Clinical Chemistry II (3).** *Fall, Junior Year.* This course deals with the significance of chemical reactions in diagnostic procedures and their relationship to the disease process. Emphasis is placed on accuracy, precision, and the limitations of tests. In the study of organ functions, interpretation, evaluation and rational analysis of clinical laboratory problems are practiced.

**MEDT 453. Clinical Chemistry Practice (5).** *Spring, Senior Year.* This period of instruction is included to enable the student to apply and perfect the procedures learned in didactic lectures and laboratories. The instruction is conducted in a clinical environment and under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge and maximum proficiency.

**MEDT 463. Clinical Practice Hematology (5).** *Spring, Senior Year.* This course is a rotation through the clinical hematology laboratory which incorporates instruction and oral examinations in routine hematology, special hematology and coagulation. Applied professional experience includes the use of the most modern methods and instrumentation in the analysis of hematological and coagulation samples. Proficiency in manual and automated methods is required.

**MEDT 464. Immunohematology (3).** *Fall, Senior Year.* This course is a study of immunologic principles applied to the preparation of blood for transfusion. The immunology of antibody production and antigen-antibody reactions is presented. Laboratory work emphasizes explanation and performance of technical blood bank methods.

**MEDT 467. Clinical Practice Immunohematology (5).** *Spring, Senior Year.* This course consists of applied professional experience in a clinical blood bank laboratory. Instruction and oral examinations are given at the bench in routine and specialized areas of the modern blood bank. Students enrolled in this course are expected to demonstrate a high level of proficiency in all areas of blood banking prior to completing the course.

**MEDT 472. Clinical Microbiology II (3).** *Fall, Senior Year.* The objective of this course is to acquaint the student with the most recent trends in laboratory diagnosis, as well as provide him with insight into the problems associated with nosocomial infections, iatrogenic infections, infection control, unusual infectious agents and changing spectrums in antibiotic therapy. Laboratory sessions will address sophisticated techniques employed in the identification of infectious agents.

**MEDT 473. Clinical Practice Microbiology (5).** *Spring, Senior Year.* This course involves a period of instruction which enables the student to apply and perfect the various microbiological techniques learned in didactic lectures, and laboratories. This instruction is conducted in a clinical environment under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge in laboratory procedures.

**MEDT 474. Clinical Practice Immunology/Serology (5).** *Spring, Senior Year.* This course is designed to permit the student to apply and perfect the immunological and serological procedures utilized in the clinical laboratory. It is conducted in the clinical environment under the direction of proficient technologists.

**MMIC 490. Pathogenic Microbiology (4).** *Fall, Junior Year.* This course is designed to provide the student with a basic understanding of the pathogenic properties of various microorganisms in human disease. The course includes the study of the major groups of infectious agents with emphasis upon the differentiation and culture, clinical manifestations, infectious processes and epidemiological aspects of bacteria. Laboratory exercises designed to characterize the various groups of pathogens, as well as to study the action of antibiotics and the processes of sterilization and disinfection. Appropriate laboratories will be incorporated into the sequence.

**MEDT 491. Immunology (4).** *Fall, Junior Year.* This course is designed to provide the student with a basic understanding of current immunological concepts and their application in the diagnoses, prevention and treatment of infections and noninfectious disease processes. Appropriate laboratories will be incorporated into the sequence.

## FACULTY

**Baldwin, Anna J.**, Clinical Coordinator

BS, MT(ASCP), George Washington University.

**Cartwright, Willie Q.**, Assistant Professor

BS, Howard University; MT, United States Army Medical Service School, MS, State University of New York at Buffalo.

**Cherng, Ai-Shuan S.**, Instructor

BS, National Taiwan University; MT, Health Department of Florida; MS, Indiana University.

**Costello, Dolores W.**, Instructor

BS, MT(ASCP), Mount Saint Agnes College.

**Griffey, Vivi-Anne W.**, Instructor

BS, MT(ASCP), University of Maryland.

**Harr, Robert R.**, Instructor

BS, Kent State University; MT, Cleveland Clinic Foundation School of Medical Technology; MS, Ohio State University.

**Jiji, Rouben**, Associate Professor

MD, Royal College of Medicine, Baghdad, Iraq.

**Knoblock, Edward C.**, Associate Professor

AB, Western State College of Colorado; MS, University of Maryland.

**Lucas, Carolyn C.**, Instructor

BS, MT(ASCP), College of Charleston; MT, Medical University of South Carolina; MAT, The Citadel.

**Masters, Jason M.**, Program Director and Associate Professor

BS, High Point College; MS, Sul Ross State; PhD, University of Maryland.

**Pawar, Vinayak B.**, Assistant Professor

BS, University of Bombay; MT(ASCP) Saint Frances Hospital School of Medical Technology; M(ASCP) Boone County Hospital; MS, University of Missouri, PhD, University of Kentucky.

**Pittiglio, Denise Harmening**, Instructor

BS, MT(ASCP) and MS, University of Maryland.

**Wilde, Kenneth D.**, Assistant Professor

BS, Kutztown State College; MS and PhD, University of Maryland.

**Wilson, Johanna E.**, Academic Coordinator

BS, MT(ASCP), University of Maryland.

### *Clinical Faculty*

**Anthony, Ronald L.**, Assistant Professor and Director of Clinical Immunology

BA, Susquehanna University; PhD, University of Kansas.

**Dawson, R. Ben**, Assistant Professor and Director of Blood Bank

B, and BS, Hampden-Sidney College; MD, University of Virginia.

**Rasmussen, Peter**, Professor and Laboratory Director

MD, Temple University.

**Seiguer, Alberto**, Associate Professor and Director of Hematology

MD, University of Buenos Aires.

**Smith, Andrew G.**, Associate Professor and Director of Microbiology

BS, Pennsylvania State University; PhD, University of Pennsylvania.

**Tigertt, William D.**, Professor and Medical Director

AB and MD, Baylor University.

### *Clinical Teaching Staff*

Brooks, Margaret

Davis, Rocio Q., BA, MT(ASCP)

Dougherty, Elizabeth L., BS, MT(ASCP)

Dourakos, Constance, BS, MT(ASCP)

Koch, Thomas R., PhD

Kuchta, Jane, BS, MT(ASCP) SBB

Maloney, Bertha H., BS, MT(ASCP)

Redor, Ofelia, BS

Schwartz, Lenore A., BS

Thomas, Gloria, MT(ASCP), M(ASCP)

Young, Russell, BS, MT(ASCP) SBB

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# PHYSICAL THERAPY PROGRAM

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PHILOSOPHY

The Physical Therapy Department of the University of Maryland School of Medicine seeks with every available resource to educate physical therapy students, maintain active programs for professional growth of faculty, and support research and continuing education in an effort to enhance the academic and clinical state of the art. As part of the health care delivery team, students and faculty strive to provide the best possible health care and service to the community and the state.

ACCREDITATION

Since 1956, the University of Maryland has offered a two-year professional program in physical therapy. Completion of a two-year preprofessional program and subsequently the professional program results in a Bachelor of Science degree and a Certificate of Proficiency in Physical Therapy. The University of Maryland is accredited by the Middle States Association of Colleges and Secondary Schools and the physical therapy curriculum is approved by the Council on Medical Education of the American Medical Association in collaboration with the American Physical Therapy Association. A graduate is eligible to become a member of the American Physical Therapy Association and to apply for professional licensure in Maryland and in other states.

CLINICAL AFFILIATIONS

Clinical education is an essential part of the total physical therapy program offered at the University of Maryland. Currently, there are more than 70 centers being used for experiences in acute/general, chronic/rehabilitation, orthopedic, sports medicine, and community health settings. These centers are located over a wide geographic area throughout the United States but primarily in the northeastern corridor.

During 21 weeks of full-time clinical affiliation the student has the opportunity to utilize what has been learned in didactic courses and to implement therapeutic, evaluative, and interpersonal skills in the care of patients.

PREPROFESSIONAL CURRICULUM

**Freshman-Sophomore Curricula.** Preprofessional education consists of liberal arts and science courses which the student may take within the University of Maryland system or at any other accredited college or university. These courses have been selected to fulfill the professional prerequisites and also to provide a wide variety of career options without subsequent loss of credit should a student elect to choose another course of study.

	Semester Hour Credits
Mathematics . . . . . (Two college level courses which may be algebra and trigonometry OR any math course above that level)	6
Statistics . . . . . (General or introductory statistics to include at least mean, mode, median, random variables, variance, confidence limits and binomial probability)	3
Chemistry . . . . . (General college chemistry, with lab)	8
Physics. . . . . (General college physics, with lab)	8

Zoology or Biology . . . . .	8
(One course in General Zoology or Biology for science majors, with lab and one course in Human or Comparative Anatomy, with lab)	
Social Science . . . . .	3
(Afro-American studies, anthropology, economics, government and politics, urban studies, sociology, geography)	
Psychology . . . . .	6
(One introduction or general course and one of developmental, educational or personality study — abnormal psychology is recommended)	
English Composition . . . . .	3
(Students with advanced credit or exemption may substitute a three-credit elective)	
Speech, Public Speaking, or Communications . . . . .	3
(Students with one year of speech in high school may substitute a three-credit elective upon furnishing a transcript)	
Arts & Humanities . . . . .	6
(History, literature, foreign language, philosophy, appreciation of: art, music, drama, dance)	
Electives . . . . .	6
(No more than two credits of non-theory or skills may be applied. Review or introductory courses may not be used if they are below the required level in biology, chemistry, physics, and mathematics. Physiology is recommended, but selection may be made in any area of individual interest.)	
Total 60 SHC 90 QHC	

**Articulation Programs.** The professional physical therapy program at UMAB has designated articulation with the following institutions, whereby courses are predetermined and transferable:

- Anne Arundel Community College
- Alleghany Community College
- Catonsville Community College
- Cecil Community College
- Charles County Community College
- Chesapeake College
- The Community College of Baltimore
- Dundalk Community College
- Essex Community College
- Frederick Community College
- Garrett Community College
- Hagerstown Junior College
- Harford Community College
- Howard Community College
- Montgomery College
- Prince George's Community College
- Frostburg State College
- University of Maryland
- Baltimore County, College Park, Eastern Shore Campuses

An articulation publication is available in the counseling center of each of the community colleges. Information regarding the three campuses of the University of Maryland, as well as Frostburg State College, can be found in their respective catalogs.

## PROFESSIONAL DIVISION ADMISSIONS

An Admissions Committee is charged with selecting 52 students annually for the junior class which begins in June. Final selection is based on the following: grade-point average in the preprofessional curriculum courses only, results of an Allied Health Professions Admissions Test, information obtained from a Personal Data Form, letters of reference, and a personal interview.

Minimum qualification at the junior level is the completion of 60 designated credits in which no grade of less than "C" is acceptable. In addition, at least 18 credits must be completed in the math and science area by December 31, which is the application deadline.

There is no exclusion based on sex, age, race, ethnic background or prior completion of another academic degree.

Nonresident candidates are limited to a maximum of 20 percent. It is, therefore, reasonable to assume that at least a "B" average would be needed to be considered for selection.

Prior work or volunteer experience in a health-related facility, especially physical therapy, is strongly recommended.

## PROCEDURE

**Admission Application.** To obtain an application, address your request to the University of Maryland at Baltimore, Office of Admissions, 660 W. Redwood Street, Baltimore, Maryland 21201 or phone (301) 528-7480. Applications become available after October 1 preceding the year of admission. Deadline date for receipt of application is December 31, and supporting documents (transcripts) must be received by February 1 of the year of admission. Applicants are requested to submit either a catalog or a photocopy of a catalog description of all prerequisite courses completed at a college or university outside of the state of Maryland. This information is vital to processing the application.

**Allied Health Professions Admissions Test.** To obtain an Allied Health Professions Admissions Test application, address your request to the Psychological Corporation, 304 East 45th Street, New York, New York 10017. Only scores of a test taken prior to or in January will be used for June selection. Request that your scores of the test be mailed to the Department of Physical Therapy.

**Personal Data Forms** will be mailed to those applicants achieving the highest scores based on both the grade-point average in required courses already completed and scores on the Allied Health Professions Admissions Test. Plans for completing any remaining required courses in the spring semester will need to be documented.

**Interviews** will be held for a select number of applicants who will be so notified.

Based on criteria as outlined, determination of candidates will be made for the existing 52 positions and also for an alternate list. Students will be notified of their status before the end of May.

## HOUSING

For information contact the Director of Housing, University of Maryland at Baltimore, 621 W. Lombard Street, Baltimore, Maryland 21201.

## FINANCIAL AID

For information contact the Student Aid Officer, University of Maryland at Baltimore, 610 W. Lombard Street, Baltimore, Maryland 21201. There is a February 15 *priority* date for consideration for campus-based funds and *deadline* date for Maryland State Scholarship Board funds. Students interested in MSSB scholarships are urged to file early so as not to miss the deadline.



## TUITION AND FEES

	Beginning Summer	Fall Semester	Spring Semester
Matriculation Fee (new students)	\$ 15.00	\$ -	\$ -
Tuition: In-State	228.00	335.00	335.00
Tuition: Out-of-State	228.00	1,215.00	1,215.00
Instructional Resources Fee	-	16.00	16.00
Supporting Facilities Fee	6.00	30.00	30.00
Student Activities Fee	-	7.50	7.50
Student Health Fee	-	10.00	10.00
Student Liability Insurance	-	28.00	-
Hospital Insurance/Blue Cross (required if not covered elsewhere)			
Individual	-	102.12	102.12
Two Persons	-	196.88	196.88
Family		261.96	261.96
Dormitory Fee	-	427.50	427.50
Graduation Fee (senior year)		-	15.00
Clinical Education			
Junior summer, 3 weeks	\$ 82.00		
Senior summer, 6 weeks	\$158.00		
Approximate cost of books, uniforms, etc. per year	\$250.00		

(Costs as listed are subject to change)

The student should plan his/her finances according to a full academic schedule. The beginning summer of the junior year consists of a concentrated six-week session, and there is a three-week affiliation in the following summer.



# PROFESSIONAL CURRICULUM POLICIES

## GRADING

Each student is responsible for his/her academic work and progress. To progress satisfactorily, the quantitative and qualitative requirements of each course in the Department of Physical Therapy must be met. Faculty will assist as needed or requested.

The following symbols comprise the department's grading system.

Symbol	Quality Points	Definition
A	4	Excellent mastery of the subject; outstanding scholarship
B	3	Good mastery of the subject; good scholarship
C	2	Acceptable mastery of the subject; usual achievement expected
D	1	Borderline understanding; marginal performance. This grade does not represent satisfactory progress toward a degree and must be repeated.
F	0	Failure to understand the subject; unsatisfactory performance
I	0	Incomplete. This is an exceptional grade given only to a student whose work has been qualitatively satisfactory when, due to illness or other circumstances beyond his control, he has been unable to satisfactorily complete some small portion of the coursework. The student will remove the "I" by completing work assigned by the instructor by the end of the next semester in which he/she is enrolled at UMAB. Otherwise, the "I" becomes equivalent to an "F" grade.
WD	0	Withdrawal from the program.
AU	0	Under certain circumstances a student may register to audit a course. To have the audit notation appear on the student's transcript, it will be required of the student that he/she attend a definite number of classes.
P/F	0	Pass/Fail indicates satisfactory or unsatisfactory completion of the course requirements. This grading will be used only in those courses designated by the department.

## CLASS ATTENDANCE

Students are accountable for all work missed due to absence. With a justifiable absence an instructor may assist the student in making up work at a time that will not interfere with the progress of other students. Absenteeism from classes requiring student participation, such as laboratory sessions, group discussions, reports or demonstrations may be used in the overall evaluation of the student. A grade of "I" may be given until such work has been satisfactorily completed. Attendance in clinical education courses is mandatory.

## ACADEMIC PROBATION

If a student does not achieve a 2.0 average for a given semester, he/she will be placed on academic probation. A student will be academically dismissed at the end of a second consecutive semester wherein he/she receives less than a 2.0 average. A student may also be dismissed if he/she does not achieve an average high enough in the semester following academic probation to bring his cumulative average in the professional portion of the program to 2.0.

## **ADVANCEMENT AND GRADUATION**

If a student receives a "D" grade in a professional course, his/her case will be referred to the faculty who will make recommendations to the department chairman as to how this grade may be removed.

An "F" grade may not be removed from a student's transcript. At the discretion of the faculty and the department chairman, a student may be allowed to repeat the course at UMAB or take an equivalent course at another university.

Before a student will be allowed to progress to the junior clinical affiliation, the senior year, and the senior clinical affiliations, the following must prevail: grades of "C" or better in all courses taken to date and faculty consensus of student's professional competency.

Before a student will be certified for graduation the following must prevail: satisfactory completion of all required courses with grades of "C" or better and faculty consensus that the student is professionally competent.

## **DISMISSAL**

The faculty of the Department of Physical Therapy reserves the right to ask the Dean of the School of Medicine to dismiss a student from the university for any of the following reasons: failure to meet academic requirements; infraction of university rules; possessing a physical or mental health problem which precludes academic progress for the student or others or when the problem interferes with the student's competence in practicing physical therapy; behavior which displays a lack of professionalism; or a failure to observe the moral and ethical standards of the Physical Therapy profession.

## **READMISSION FOLLOWING DISMISSAL**

Any student desiring to be readmitted may petition the faculty for consideration by submitting all supporting documents to the Admissions Committee for processing and referral to the faculty. Readmittance requires a 2/3 majority vote of the faculty.

## **CREDIT BY EXAMINATION**

Courses within the department may, in certain cases, be satisfactorily completed under "credit by examinations" procedures. These procedures, along with detailed rules and regulations, appear in a handbook given to all physical therapy students.

## **SCHOOL OF MEDICINE CATALOG**

Since physical therapy students are part of the School of Medicine, they are advised to avail themselves of the general and applicable information as appears in the School of Medicine catalog.

## **PROFESSIONAL CURRICULUM**

**Junior-Senior Curricula.** Professional education is offered only at the Baltimore City campus of the University of Maryland (UMAB). A student must make separate application and submit to an admission process for the professional portion. Admission to the University of Maryland system as a freshman or sophomore does not guarantee admission to the professional program, since competition is keen and enrollment is limited to 52 positions.

Academic advisement is available to students enrolled on the UMCP and UMBC campuses. Other interested students should contact the secretary for admissions at the Baltimore City campus, or, in the case of students at one of Maryland's public community colleges, seek information about required courses at his/her school's counseling center.

Students may receive credit by achieving percentile scores of at least 50% on the College Level Examination Placement (CLEP) tests. Students should request that official results of these tests be sent to the Department of Physical Therapy for credit evaluation if the scores have not been posted on their transcript.



*Junior Year, Summer Semester*

**PTAB 400. Human Anatomy I.** (4). A study of the morphology of the human upper extremity and thorax through lecture and cadaver dissection. Emphasis is placed on the musculoskeletal and neuromuscular systems. Consideration is given to clinical entities. Classes will be integrated with Physiology, Pathology, Manual Muscle Testing and Range of Motion. (32 lec., 96 lab.)

**PTAB 402. Human Physiology I.** (2). Survey of human physiology related to body systems. Major emphasis placed on cell physiology, nervous system, muscular system, and physiology of bones.

*Junior Year, Fall Semester*

**PTAB 321. Professional Relations I.** (2). Introduction to the concepts of professionalism and ethical behavior. Professional organizations and mechanisms of regulation such as accreditation, certification and licensure are discussed. Basic medical terminology and written/verbal communications are included. Visits to six different local facilities during the last eight weeks of the semester. (16 lec., 48 clinic)

**PTAB 330. Manual Muscle Testing and Range of Motion.** (1). Principles and techniques of performing, recording and analyzing manual muscle and range of joint motion tests are presented. Methods of assessing muscle flexibility, girth, length and strength are included. Coursework is presented along with Human Anatomy I and Human Anatomy II. (8 lec., 24 lab.)

**PTAB 331. Patient Care Procedures.** (1). Specific patient care procedures related to physical therapy, inhalation therapy, and nursing are studied. Included are isolation procedures, sterile techniques, emergency situations which may occur in clinical settings, catheterization, respirators, specialized beds, injections, tracheotomies, suctioning, improvised equipment, nutrition, bandaging, and vital signs. (8 lec., 24 lab.)

**PTAB 341. Physical Therapy Theory and Practice I.** (1). Palpation and manipulation of soft tissue for the purpose of evaluating anatomical structures responsible for restriction of normal range of motion or inhibition of functional activity. Includes basic physiological effects of massage, application of massage techniques and the principles of peripheral joint manipulation. (8 lec., 24 lab.)

**PTAB 401. Human Anatomy II.** (4). Continuation of Human Anatomy I with emphasis on abdomen, lower extremity, head, and neck. (32 lec., 96 lab.)

**PTAB 403. Human Physiology II.** (2). Continuation of Human Physiology I and relating to the four major systems with consideration given to skin physiology. Laboratory exercises are coordinated with lectures and emphasize the cardiovascular and pulmonary systems. (16 lec., 48 lab.)

**PTAB 405. Pathology.** (2). Basic principles study of disease and injury with application to the various systems of the body. Includes observation of autopsies and pathological specimens. Lectures are integrated with Human Anatomy and Human Physiology. (32 lec.)

**PTAB 406. Neuroanatomy and Neurophysiology.** (4). A coordinated presentation of the structure and function of the human nervous system with emphasis on the central nervous system and sensory receptors. Clinical applications are included. Students engage in dissection of the human brain, examine microscopic sections of the brainstem and spinal cord, and experiment with functional aspects of the nervous system. (48 lec., 48 lab.)

*Junior Year, Winter Session*

**PTAB 300. Human Growth and Development.** (3). Characteristics of normal growth and development from fetal life to old age with emphasis on physiological considerations of growth, development, and maturation of the infant and young child. Includes considerations and patterns of abnormal development. (48 lec.)

**PTAB 332. Gait Analysis.** (1). Introduction to the development of human locomotion, gait cycle description, displacement changes, muscular activity, and floor reaction analysis. Includes qualitative and quantitative measurements and evaluation of normal and selected abnormal gait parameters. Basic elements of gait training are introduced. (8 lec., 24 lab.)

**First Aid Course.** (0)

*Junior Year, Spring Semester*

**PTAB 301. Biomechanics and Kinesiology.** (3). A detailed study of human motion with emphasis on mechanical and functional aspects. Includes biomechanical measurements, calculations, functional anatomy, and body mechanics under both normal and pathological conditions. (32 lec., 48 lab.)

**PTAB 322. Professional Relations II.** (2). Continuation of Professional Relations I. Lecture topics include problem oriented medical records and medical systems, professional staff relations, third party payment, home health programs, and state and community health department organizations. Students make two consecutive visits to four different local facilities during the last eight weeks of the semester. (16 lec., 48 clinic)

**PTAB 333. Basic Rehabilitation.** (2). Introduction to the multidisciplinary approach of comprehensive care for the handicapped. Included are principles and techniques of gait training, transfers, activities of daily living prescription and use of assistive devices, and wheelchairs. (16 lec., 48 lab.)

**PTAB 342. Physical Therapy Theory and Practice II.** (2). The study of therapeutic use of ultraviolet energy (actinotherapy), heat (thermotherapy) and cold (cryotherapy) by conduction, convection, radiation, and conversion. Includes physical principles, physiological effects, precautions and rationale for use. (16 lec., 48 lab.)

**PTAB 343. Physical Therapy Theory and Practice III.** (3). *Part I:* Electrotherapy covers the physics and physiological effects of low frequency alternating and direct currents as applied percutaneously for therapeutic and diagnostic use. (16 lec., 24 lab.) *Part II:* Electromyography, Nerve Conduction Velocity, and Biofeedback include the physiological basis and basic components for electromyographic recording. Laboratory experience in nerve conduction velocity, basic diagnostic EMG measurements and biofeedback is provided. (16 lec., 24 lab.)

**PTAB 344. Therapeutic Exercise I.** (2). Application of theory of exercise and study of developmental principles for the prevention, recognition, and treatment of physical disabilities. Includes positioning, range of motion exercises, and traditional exercise programs. (16 lec., 48 lab.)

**PTAB 350. Clinical Science — Geriatrics.** (1). Study of aging characteristics including physical, psychological, and socio-economic aspects with emphasis on a clinical medicine view of symptomatology, diagnostic, and treatment procedures. Includes visitation to a geriatric center. (8 lec., 24 lab.)

**PTAB 380. Research and Design I.** (1). Discussion of experimental method, literature search techniques, review of basic statistics, data acquisition and reduction tools. Students begin a group research project. (16 lec.)

**PTAB 404. Human Physiology III.** (2). Study of physiological adaptations to stress within normal and pathological states. Includes concepts of work, exercise, energy expenditure, oxygen debt, and body composition. Emphasis is placed on cardiovascular, musculoskeletal, and respiratory functions related to physical activity, normal growth and development, the aging process, and prevention of illness. (16 lec., 48 lab.)

*Junior Year, Summer Clinic*

**PTAB 324. Clinical Education I.** (2). Three weeks of full-time clinical experience. Opportunity to develop proficiency in therapeutic and evaluative procedures learned in the first academic year. (approximately 105 clinic hours)

*Senior Year, Fall Semester*

**PTAB 423. Professional Relations III.** (1). Introduction to administration and supervision as it applies to the field of physical therapy. Discussion topics include planning, organization, personnel management, departmental policies, and physical and fiscal factors. Compliance surveys by the State Health Department and Federal Inspection Agents as they apply to hospitals, nursing homes and private practice are also discussed. Four visits are made to one local facility during the last four weeks of the semester. (12 lec., 12 clinic)

**PTAB 445. Therapeutic Exercise II.** (4). Application of neurophysiological and developmental principles to exercise techniques designed to facilitate normal neuromuscular function. Use and contraindications of cold, vibration, compression, traction, and resistance are included. Proprioceptive neuromuscular facilitation techniques along with specific treatment approaches developed by Knott, Bobath, Rood, and Brunnstrom are examined and practiced. (32 lec., 96 lab.)

**PTAB 460. Clinical Science — Orthopedics.** (4). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the musculoskeletal system. Medical aspects and basic orthopedic principles are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (32 lec., 96 lab.)

**PTAB 461. Clinical Science — Neurology.** (3). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the central and peripheral nervous systems. Medical aspect will be correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients with upper and lower motor neuron lesions. (32 lec., 45 lab.)

**PTAB 462. Clinical Science — Amputee/Prosthetics.** (2). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital, traumatic and acquired pathological amputation. Medical aspect will be correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (16 lec., 48 lab.)

**PTAB 463. Clinical Science — Skeletal Muscle Disorders.** (1). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of skeletal muscles. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (8 lec., 24 lab.)

**PTAB 464. Clinical Science — Respiratory Disorders and Rheumatology.** (1). *Part I — Respiratory Disorders:* A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the respiratory system. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (6 lec., 6 lab.) *Part II — Rheumatology:* A review of appropriate basic science followed by medical lectures on the etiology and management of rheumatological conditions. Medical aspects are correlated with a physical therapy problem solving approach to the evaluation, program planning and treatment of patients. (6 lec., 6 lab.)

**PTAB 465. Clinical Science — Cardiovascular Disorders.** (1). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the cardiovascular system. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of cardiac patients. (14 lec., 6 lab.)

**PTAB 481. Research and Design II.** (1). Continuation of Research and Design I. Essentials of a research proposal, data acquisition, data reduction, data analysis and the pilot study are covered. Students will continue the group research project begun in Research and Design I. (16 lec.)

*Senior Year, Winter Session*

**PTAB 425. Clinical Education II.** (4). The first senior full-time clinic lasts for six weeks —



from January to mid-February. Students are responsible for patient evaluation, assessment, treatment, program planning and coordination of patient care with other existing programs. Hours are determined by the clinic and may vary between 35-40 per week.

#### *Senior Year, Spring Semester*

**PTAB 426. Clinical Education III.** (4). The second senior full-time clinic lasts for six weeks — from mid-February through March. Student responsibilities are the same as in Clinical Education II.

**PTAB 451. Clinical Science — Psychiatry.** (2). A review of appropriate basic science followed by medical lectures on the etiology and management of psychological and psychiatric problems. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients with psychological manifestations. (24 lec., 6 lab.)

**PTAB 452. Clinical Science — Dermatology/Burns.** (1). A review of appropriate basic science followed by medical lectures on problems involving the skin with special emphasis on burns. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients with various types of burns. (11 lec., 12 lab.)

**PTAB 466. Clinical Science — Ob/Gyn and Pediatrics.** (1). *Part I — Ob/Gyn:* A review of appropriate basic science followed by medical lectures on prevention and remediations of musculoskeletal, respiratory and other medical problems of pregnancy. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of the pre- and post-parturition patient. (6 lec., 6 lab.) *Part II — Pediatrics:* A review of appropriate basic science followed by medical lectures on growth, developmental anomalies, congenital and acquired musculoskeletal, respiratory and other medical problems of the pediatric patient. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of the pediatric patient. (6 lec., 6 lab.)

**PTAB 482. Research and Design III.** (1). Continuation of Research and Design II. Essentials of a research report, including journal format and oral presentations at scientific meetings, are covered. Group research projects are to be completed and presented to the faculty. (16 lec.)

**PTAB 488. Special Topics in Physical Therapy.** (1-3). Lecture/laboratory demonstrations on topics presented by specialists in given areas and/or a problem-solving experience which is commensurate with student's interest and ability. Topics presented and number of credits are to be arranged by the department chairman. Open to special students as well as senior physical therapy students. (One special topics course is required).

#### *Summer After Senior Year*

**PTAB 427. Clinical Education IV.** (4). Third senior full-time clinic. Student has the option of going for six or eight weeks beginning the first part of June. The extension of eight weeks would be by mutual desire and consent of student and clinic. Student is expected to function on the level of a staff physical therapist by this time and be capable of providing total comprehensive physical therapy care.

## **FACULTY**

### *Chairman*

**Hardiman, Clarence W.**, Associate Professor, BS, University of Florida, 1949; Certificate in Physical Therapy, Duke University, 1950; MS, Florida State University, 1954; PhD, 1964; LPT.

### *Associate Professor*

**Hobart, Donald J.**, BS, Western Maryland College, 1962; MA, University of Maryland, 1967, PhD, 1972.

**Jurf, Amin N.**, BS, Western Maryland College, 1959; PhD, University of Maryland, 1966.

**Latimer, Ruth M.**, BS, University of Richmond, 1945; Certificate in Physical Therapy, U.S. Army Hospital, 1946; MS, Medical College of Virginia, 1952; MEd, University of Maryland, 1973, LPT.

*Assistant Professor*

**Alon, Gad**, Certificate in Physical Therapy, Wingate Institute, 1968; MS, University of Maryland, 1972; LPT.

**Danoff, Jerome**, BS, Johns Hopkins University, 1968; MS, Pennsylvania State University, 1972; PhD, University of Maryland, 1976 \*

**Little, R. Roger**, BS, University of Maryland, 1964; MD, University of Maryland, 1968. \*

*Instructor*

**Anderson, Paul A.**, BA, Concordia College, 1969; MA, University of Maryland, 1978. \*

**DeWitt, Heather**, BS, University of Southern California, 1972; LPT.

**Hurbon, Douglas**, BS in Physical Therapy, University of Connecticut, 1966; MS, Southern Connecticut State College, 1975; LPT.

**Iglarsh, Z. Annette**, BS, City College of New York, 1970; MAT, Alaska Methodist University, 1972; BS, Upstate Medical Center SUNY, 1975; LPT.

**Kelbaugh, Patricia**, BS and Certificate in Physical Therapy, University of Maryland, 1958; LPT. \*

**Neill III, William**, BA, Johns Hopkins University, 1950; Certificate in Physical Therapy, University of Pennsylvania, 1952; LPT. \*

**Rance, Naomi**, BS, University of Maryland, 1973; Certificate in Physical Therapy, University of Pennsylvania, 1975; LPT. \*

**Teets, R. Scott**, BS, West Virginia University, 1969; Certificate in Physical Therapy, University of Pittsburgh, 1970; MEd, West Chester State College, 1972; LPT.

**Violand, Richard L., Jr.**, BS, Ohio State University, 1968; BS, University of Washington, 1974; LPT.

*\*part-time faculty*

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# RADIOLOGIC TECHNOLOGY PROGRAM

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THE PROGRAM

The four-year program in radiologic technology, under the School of Medicine at the University of Maryland, leads to a Bachelor of Science degree, and is fully approved by the American Medical Association's Council on Medical Education. Graduates of this program are eligible to take the national examination for certification as a registered technologist (R.T., A.R.R.T.) given by the American Registry of Radiologic Technologist.

Graduates of the program are employed in radiologic technology education, radiation safety, radiology administration, clinical and special procedure technology and commercial radiology. One hundred percent of the graduates have become certified by the A.R.R.T., scoring in the upper 1% of all candidates on a national level and 20% of the graduates have pursued graduate education.

ADMISSION

Since the Baltimore Campus of the University of Maryland only offers professional courses and programs, the first two undergraduate years must be completed on another University of Maryland campus (UMCP, UMBC, UMES, or UMUC) or other accredited two or four year colleges for the preprofessional courses. Students may apply for advancement or admission to the professional portion of the program after a minimum of three semesters of preprofessional work with a cumulative GPA of 2.5. Application should be made no later than April 1st for the class entering in the fall. Fifteen to 20 students are admitted each fall.

PREPROFESSIONAL (Freshman/Sophomore) REQUIREMENTS

English Composition .....	3 credits
Biology/Zoology .....	8 credits
(Human Anatomy and Physiology are highly recommended)	
Chemistry .....	8 credits
(Should include Inorganic with lab and Organic with lab)	
Physics .....	8 credits
Math .....	6 credits
(Statistics is required)	
Behavioral and Social Sciences .....	12 credits
One psychology and one sociology course are required. Other courses can be selected from: economics, philosophy, Afro-American studies, anthropology, urban studies or additional psychology.	
Speech .....	3 credits
Additional electives* .....	12 credits
*It is suggested that the student meet with an advisor (see below) as early as possible to select electives.	
UMBC and UMES — Mr. Jeffrey Miller .....	528-6272
UMCP — Ms. Cynthia Rice .....	528-6272
All transfer students — Ms. Betty Arrieta .....	528-6272

APPLICATION AND ADMISSION PROCEDURE

Although the Radiologic Technology Program is small, the administration actively strives to achieve a diversity among its students; therefore, no exclusion/limitation is made based on sex, age, race, citizenship, residence, or any other nonacademic criterion. Admission is based primarily on completion of preprofessional requirements and the student's GPA. The Division of Radiologic Technology uses the interview process only as a medium of advisement, not selection; but, the division feels that an applicant would benefit by an opportunity to discuss his/her academic background and to see the facility at the University of Maryland Hospital on the UMAB campus.

Applications can be obtained from:

University of Maryland at Baltimore  
Office of Admissions and Registrations  
660 W. Redwood Street  
Baltimore, Maryland 21201

OR

Allied Health Professions Building  
University of Maryland  
Division of Radiologic Technology  
32 S. Greene Street, Room 215  
Baltimore, Maryland 21201

## PROFESSIONAL PROGRAM

Approximately one-half of the students' time at the UMAB campus will be spent in clinical education, i.e., obtaining clinical experience in the broad field of radiology including: general diagnostic radiology, fluoroscopy, special procedures, mammography, ultrasound, computerized axial tomography, shock trauma, operating room radiography, nuclear medicine, pediatric radiography, and radiotherapy, etc. The University of Maryland Hospital serves as the primary resource for the clinical education portion of the curriculum.

	Fall	Spring	Summer
<i>Junior year required courses</i>	MDRT 300	MDRT 330	MDRT 340
	MDRT 310	MDRT 332	MDRT 345
	MDRT 311	MDRT 333	
	MDRT 314	MDRT 334	
	MDRT 315	MDRT 335	
<i>Senior year required courses</i>	MDRT 360	MDRT 370	
	MDRT 362		
	MDRT 364	MDRT 375	
	MDRT 365	Electives:	
	Electives:	374, 376	
	366, 367	384, 385	
		386, 388	

*Winter Mini-course Electives:* MDRT 368, 371, 372, 378, 389

All professional elective courses must be chosen with division approval to complete one of the three areas of specialization: administration, education, or radiologic sciences.

## UNDERGRADUATE MEDICAL PROGRAM

**MDRT 300. Effective Interaction in Allied Health (3).** Using discussions, lectures, and demonstrations, the nature, objectives and outcome of interpersonal interactions are emphasized. Major approaches include transactional analysis, communications theory and medical sociology. Also included in the course are the history and development of group medical ethics, medico-legal situations, and health care delivery systems.

**MDRT 310. Human Anatomy and Physiology via Imaging (5).** The study of human anatomy is approached as visualized through a number of imaging techniques used in radiology, although emphasis is placed on normal structures as demonstrated on the radiograph. Anatomy labs are included using a "viewbox" teaching technique. The study of human physiology emphasizes physiological processes essential to imaging procedures.

**MDRT 311. Physics of Diagnostic Radiology (4).** This course is the first of a sequence of courses in radiological physics, in which the major emphasis is placed on understanding the theoretical framework of radiological science in diagnostic radiology. The course includes the nature, production, measurement, and attenuation of radiation. In addition, the students are presented with an overview of the imaging process, including: circuitry, equipment, and sensitometry.

**MDRT 314. Procedures I (4).** The course includes medical terminology and nursing procedures common to radiology, basic and advanced principles and methods of radiography of the skeletal system (excluding cranium) and torso. In addition to developing psycho-motor skills, the student will evaluate the radiograph for quality and be able to recommend supplementary views based on the radiographic findings and pathology suspected. The course will include lectures, demonstrations, labs and programmed instruction.

**MDRT 315. Clinical Education I (2).** The student will complete specific clinical objectives in the areas of routine and advanced radiography of the chest, abdomen, and the osseous system by supervised clinical experience of 20 hours per week in the Department of Radiology. One hour per week is used as a seminar in which the students will learn to critique their films for proper positioning, technique, and patient protection.

**MDRT 330. Radiobiology (3).** A non-laboratory presentation of the basic principles of radiobiology including: radiochemistry, cellular effects, radiation genetics, differential factors modifying cell sensitivity, effects on tissues and organs, systems and man. Throughout the course, radiobiologic principles will be applied to the fields of radiation safety, radiotherapy, radiodiagnosis, and nuclear medicine. Research is presented which provides evidence (laboratory and epidemiological) used in the evaluation of radiation risks and hazards.

**MDRT 332. Imaging Principles (5).** This course is second in the sequence of radiological physics courses, in which the major emphasis is on the imaging process itself, and how to produce an image which will convey to the radiologist maximum diagnostic information. Therefore, the course will include an in-depth treatment of sensitometric principles and imaging parameters affecting the ability of the medium to record data with minimum information loss. The student will perform experimentation to demonstrate and apply theoretical and practical principles.

**MDRT 333. Pathology (3).** The course includes the nature and etiology of disease, and major pathological processes. Stress is placed on medical and surgical diseases and their major radiographic manifestations. The "viewbox" teaching techniques will be employed to stress abnormal from normal variants in human anatomy.

**MDRT 334. Procedures II (3).** One half of the course covers basic and advanced methods of radiography of the cranium, including dental radiographic techniques, critical evaluation and identification of radiographs of the skull, face and mastoids with lab demonstrations and practice. The other portion of the course is devoted to the study of the fluoroscopic and urinary procedures and pediatric radiography.

**MDRT 335. Clinical Education II (2).** The student will complete specific clinical objectives in the areas of routine and advanced radiography of the skull (including dental radiography), pediatric radiography and fluoroscopic and urinary procedures by supervised clinical experience of 20 hours per week in the Department of Radiology. One hour per week is used as a seminar in which the students will critique their films for proper positioning, technique, and patient protection.

**MDRT 340. Physics and Clinical Uses of Nuclear Medicine and Therapy (3).** An introduction to the basic physics of nuclear medicine and radiotherapy, including properties of radiopharmaceuticals, and radionuclides, treatment planning, instrumentation and equipment. The course also includes an overview of the clinical uses and goals of radiotherapy and nuclear medicine, appropriate for the diagnostic technologist. In addition to lectures and labs, the student will observe in the nuclear medicine and radiotherapy departments to better appreciate theoretical principles.

**MDRT 345. Clinical Education III (2).** The student gains additional clinical experience of 36 hours per week for eight weeks in the areas covered in the preceding semesters in MDRT 315 and 335. The objectives of this experience are to develop higher levels of clinical skill, increased accuracy and speed, with greater independence and responsibility. Supervision is maintained, but is more indirect, allowing the student to assume a more active role in the management of the radiographic examination in addition to its execution. There will also be a weekly seminar.



**MDRT 360. Radiation Health (3).** This course stresses the reduction of radiation exposure to both patients and personnel in radiology and nuclear medicine by protective procedures, the understanding and use of federal and state regulations/guidelines, and the proper execution of radiation survey procedures. As a major course objective, the student will perform radiation surveys designed to meet or exceed federal and state guidelines.

**MDRT 362. Image Analysis (4).** This course is the third in a sequence of radiological physics courses in which the major emphasis is on the tests and methods used to quantitatively analyze the sensitometric properties of the film, and its ability to record information without significant loss. Through experimentation projects, the student will analyze various recording systems, and will set up a quality control program.

**MDRT 364. Special Procedures in Radiology (4).** A survey of all specialized procedures in current use in radiology, including new modalities, covers: indications, correlative anatomy, techniques employed, equipment and equipment analysis, contraindications and limitations.

**MDRT 365. Clinical Education IV (2).** The student will complete specific clinical objectives in the area of special radiographic procedures, including: neuroradiography, angiography, tomography (computerized and non-computerized), ultrasonography, mammography, etc. In addition, the student may elect to obtain clinical experience in nuclear medicine and/or radiotherapy. One hour per week is spent in seminar in which the student will present case studies. In addition, the student will be required to attend specialized conferences.

**MDRT 366. Techniques of Management and Supervision (3).** Using a lecture-discussion approach, the course covers an overview of management functions, emphasizing those techniques appropriate for the management and supervision in the Department of Radiology. Stress is also placed on human relations, management by objectives, and leadership training.

**MDRT 367. Instructional Design and Implementation (3).** Throughout the course, emphasis is placed on the development of skills basic to teaching: task analysis, set induction, preparing objectives, course syllabus, unit and lesson plans. In addition, the student will utilize and evaluate the skills developed using a number of teaching methods via peer-teaching and follow-up analysis.

**MDRT 368. Special Topics in Radiological Sciences (3).** More advanced study of one or more topics in the radiological sciences — radiation safety, equipment performance, recording systems, information and image analysis, etc. The emphasis and topics treated will vary each year depending on the interests of the instructor and student. The course, therefore, may be taken more than once for credit.

**MDRT 370. General Review for Certification (3).** The goal of this course is to prepare the student for the national certification examination by the American Registry of Radiologic Technologists by review through lecture, programmed instruction and frequent testing.

**MDRT 371. Medical Economics (2).** A basic instruction to the economic analysis of health care systems in the United States, and the discussion of various methods of financing health care.

**MDRT 372. Audiovisual Education (2).** The goals of the course are to introduce the student to the wide range of audiovisual media appropriate for allied health education, and development of skills needed to design, produce, and evaluate various kinds of instructional materials.

**MDRT 373. Radiation Epidemiology (2).** This course will provide an introduction to the methods of epidemiological surveys. Prospective and retrospective studies in radiation epidemiological research are viewed in order to correlate low-level radiation doses with somatic and genetic effects.

**MDRT 374. Communication in Radiological Sciences (3).** This course is designed for students specializing in education or administration. The course objective is to develop the communications ability of the student verbally, both in written and oral form. The student will develop those skills necessary in writing grants and other formal proposals, specifications, and articles for scientific or professional journals. Oral communication skills will stress interviewing techniques appropriate for managers and school personnel.

**MDRT 375. Clinical Education V (2).** This is a continuation of MDRT 365. The student will complete specific clinical objectives in the area of special radiographic procedures and, if elected, nuclear medicine and radiotherapy which have not been completed in the preceding fall. Seminars and conferences will be continued.

**MDRT 376. Non-ionizing and New Imaging Modalities (3).** This course includes the physics, instrumentation, equipment and clinical uses of: ultrasonography, thermography, computerized axial tomography, xerography, electron radiography, and other recent advances in imaging techniques of radiology.

**MDRT 378. Special Topics in Imaging Procedures (2).** In-depth treatment of one or more of the following imaging procedures: body section radiography, mammography, neuro-radiography, vascular radiography, procedures in nuclear medicine, ultrasonography. The emphasis and topics treated will vary each year depending on the interests of the instructor and student. Therefore, the course may be taken more than once for credit.

**MDRT 384. Educational Tests and Measurements (3).** The course includes problems in measurement, teacher use and interpretation of standardized tests, the design of teacher-made tests, the evaluation and use of test data and grading procedures.

**MDRT 385. Departmental Organization and Design (4).** This course includes an introduction to the principles of organizational structure and functioning applied to hospitals and departments of radiology. Analysis of the organization is stressed using managerial analysis techniques including work measurement, work study, flow charting and departmental survey techniques to determine the adequacy of the physical plant and staffing requirements. The student will perform a work study and/or do a departmental survey and re-design.

**MDRT 386. Program and Curriculum Design (4).** Design, organization and administration of radiologic technology programs at both the certificate and college level which will meet the AMA recommendations and essentials. As a major course project, the student will write a curriculum proposal and complete a program self-study at either the AA or BS level, which complies with essentials and recommendations.

**MDRT 387. Research in Radiological Sciences (4).** The course covers basic principles of research design, methods of research, evaluation of research data, plus critique of research methods described in professional journals. The student must design an original research project in the radiological sciences or in educational or management research, in addition to writing critiques.

**MDRT 389. Field Experiences in Specialization (2).** This course will be available to selected students to give them the opportunity to get practical experience in the area of specialization (education, administration, or radiological sciences). The specific objectives of the field experience will be set cooperatively by the field site supervisor, the student, and the student's faculty advisor selected by the department. This course may be taken more than once to gain experience in more than one area of specialization, or to develop advanced skills in one specific area.

## **FACULTY**

**Arrieta, Beatriz P.**, Education Coordinator and Instructor

BA, St. Theresa's College, Manila, Philippines; RT, University of Maryland.

**McCargo, Julia W.**, Clinical Supervisor

RT, University of Maryland Hospital.

**Miller, Jeffrey**, Instructor

BS, RT, University of Maryland School of Medicine.

**Rice, Cynthia**, Instructor

BS, RT, University of Maryland School of Medicine; BS, Agricultural and Technical University of Greensboro, North Carolina.

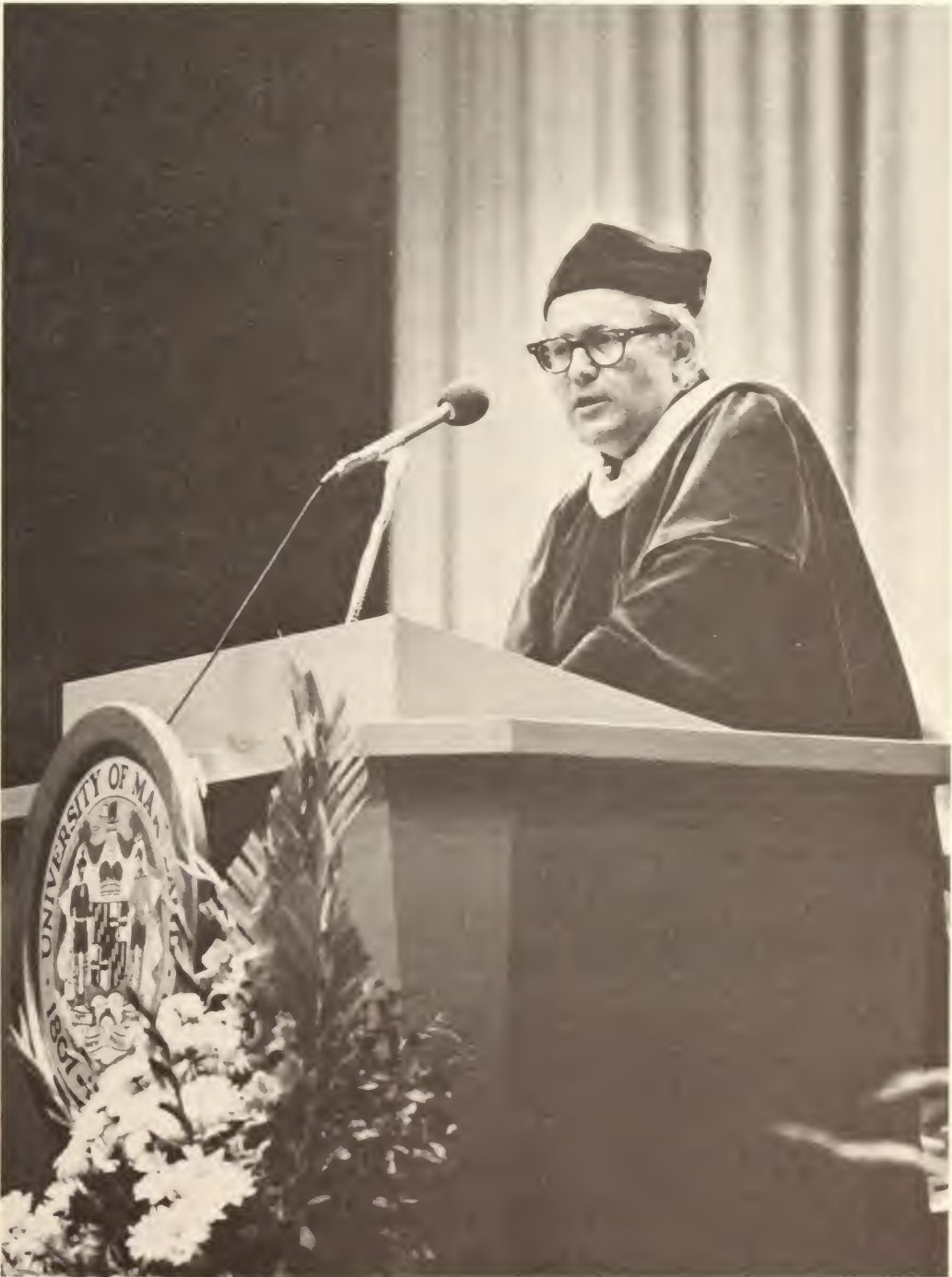
**Warner, Sandra L.**, Program Director and Assistant Professor

RT, Mercy Hospital, Baltimore; BS, Towson State College; MA, Towson State College.

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# ADMINISTRATION

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## **BOARD OF REGENTS** (as of June 1, 1979)

Dr. B. Herbert Brown, *Chairman*, 1979

Mr. Hugh A. McMullen, *Vice Chairman*, 1980

Dr. Samuel H. Hoover, *Secretary*, 1977

Mr. N. Thomas Whittington, Jr., *Treasurer*, 1980

Mrs. Mary H. Broadwater, *Assistant Secretary*, 1978

Mr. John C. Scarbath, *Assistant Treasurer*, 1980

Mr. Percy M. Chaimson, 1981

Mr. Ralph W. Frey, 1981

The Hon. Young D. Hance, *Ex-officio*

Mr. A. Paul Moss, 1983

Mr. Peter F. O'Malley, 1980

Mr. Jeffrey J. Silver, 1979

The Hon. Joseph D. Tydings, 1979

Mr. Wilbur G. Valentine, 1982

Mr. Samuel M. Witten, 1979

## **UNIVERSITY OF MARYLAND CENTRAL ADMINISTRATION**

### **President**

John S. Toll, BS, Yale University, 1944; AM, Princeton University, 1948; PhD, 1952.

### **Acting Executive Vice President**

Albin O. Kuhn, BS, University of Maryland, 1938; MS, 1939; PhD, 1948.

### **Vice President for Academic Affairs**

R. Lee Hornbake, BS, California State College, Pennsylvania, 1934; MA, Ohio State University, 1936; PhD, 1942.

### **Vice President for General Administration**

Donald W. O'Connell, BA, Columbia University, 1937; MA, 1938; PhD, 1953.

### **Vice President for Agricultural Affairs and Legislative Relations**

Frank L. Bentz, Jr., BS, University of Maryland, 1942; PhD, 1952.

### **Interim Vice President for Graduate Studies and Research**

David S. Sparks, BA, Grinnell College, Iowa, 1944; MA, University of Chicago, 1945; PhD, 1951.

### **Vice President for Development**

Robert G. Smith, BS, State University of New York at Genesco, 1952; MA, Ohio University, 1956.

## **UNIVERSITY OF MARYLAND AT BALTIMORE PRINCIPAL ACADEMIC OFFICERS**

### **Dean, Dental School**

Errol L. Reese, BS, Fairmount State College, 1960; MS, University of Detroit, 1968; DDS, University of West Virginia, 1963.

### **Dean, School of Law**

Michael J. Kelly, BS, Princeton University, 1959; PhD, Cambridge University, 1964; LLB, Yale Law School, 1967.

**Dean, School of Medicine**

John M. Dennis, BS, University of Maryland, 1943; MD, 1945.

**Dean, School of Nursing**

Nan B. Hechenberger, BS, Villanova University, 1956; MS, The Catholic University of America, 1959; PhD, 1974; (RN).

**Dean, School of Pharmacy and Dean, Graduate Studies and Research**

William J. Kinnard, Jr., BS, University of Pittsburgh, 1953; MS, 1955; PhD, Purdue University, 1957.

**Dean, School of Social Work and Community Planning**

Ruth H. Young, AB, Wellesley College, 1944; MSSW, The Catholic University of America, 1949; DSW, 1965.

**UNIVERSITY OF MARYLAND AT BALTIMORE****Chancellor**

Albin O. Kuhn, BS, University of Maryland, 1938; MS, 1939; PhD, 1948.

**Vice Chancellor for Health Affairs**

John M. Dennis, BS, University of Maryland, 1943; MD, 1945.

**Assistant to the Chancellor**

Malinda Orlin, BA, University of Michigan, 1964; MSW, 1966; PhD, University of Pittsburgh, 1973.

**Assistant to the Chancellor**

Roy Borom, BA, Wooster College, 1949; MSSA, Western Reserve University School of Applied Social Sciences, 1951.

**Director to Admissions and Registrations**

Wayne A. Smith, BS, University of Maryland, 1962.

**Director of Business Services**

Robert C. Brown, BA, University of Maryland, 1963.

**Acting Director of Health Sciences Computer Center**

Roy Borom, BA, Wooster College, 1949; MSSA, Western Reserve University School of Applied Social Sciences, 1951.

**Director of Personnel**

Ronald J. Baril, BSEd, Bridgewater State College, Massachusetts, 1965.

**Director of Physical Plant**

Robert L. Walton, BS, University of Maryland, 1938.

**Director of Student Financial Aid**

James H. Nolan, BS, University of Wisconsin-Madison, 1965.

**Director of Student Health Service**

Wilfred H. Townshend, BA, Johns Hopkins University, 1936; MD, University of Maryland, 1940.

**Director of University of Maryland Hospital**

G. Bruce McFadden, BS, Virginia Polytechnic Institute, 1957; MHA, Medical College of Virginia, 1961.

**Director of University Relations**

Louise M. White, AB, Randolph-Macon Woman's College, 1959; MLA, Johns Hopkins University, 1965.

**Librarian, Health Sciences Library**

Cyril C. H. Feng, BA, Tamkang College, Taiwan, 1961; MS, University of Kentucky, 1965.

## **SCHOOL OF MEDICINE ADMINISTRATION**

### **Dean**

John M. Dennis, BS, University of Maryland, 1943; MD, 1945.

### **Senior Associate Dean**

Morton I. Rapoport, BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.

### **Associate Dean for Admissions**

Willard M. Allen, BS, Hobart College, 1926; MS, University of Rochester, 1929; MD, 1932.

### **Associate Dean for Clinical Affairs**

John D. Young, Jr., BA, Bridgewater College, 1938; MD, University of Maryland, 1941.

### **Associate Dean for Governmental Liaison**

Frederick J. Ramsay, BS, Washington and Lee University, 1958; MS, University of Illinois, 1960; PhD, 1962; MEd, 1969.

### **Associate Dean for Medical Education and Special Programs**

Murray M. Kappelman, BS, University of Maryland, 1951; MD, 1955.

### **Assistant Dean for Continuing Education**

Jack L. Mason, BS, Mansfield State College, 1960; MEd, Pennsylvania State University, 1961; PhD, Syracuse University, 1969.

### **Assistant Dean for Fiscal Affairs**

Gregory F. Handlir, BS, Loyola College, Baltimore, 1969; MBA, 1973.

### **Associate Dean for Student Affairs**

Bernice Sigman, MD, University of Maryland, 1960; MS, Washington University, 1966.

### **Assistant Deans for Student Affairs**

Robert L. Harrell, Jr., BS, Hampton Institute, 1961; PhD, Iowa State University, 1966.

Herbert L. Muncie, BS, University of Georgia, 1968; MD, Medical College of Georgia, 1971.

S. Michael Plaut, BA, Adelphi University, 1965 PhD, University of Rochester, 1968.

Gary D. Plotnick, AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.



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# FACULTY ROSTER

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## ANATOMY

- Anderson, Larry D.**, Assistant Professor  
BS, Oakland University, 1970; MS, Wayne State University, 1973; PhD, 1976.
- Barrett, Charles P.**, Associate Professor  
BS, King's College, 1957; PhD, University of Maryland, 1969.
- Bulmash, Melvin**, Assistant Professor  
BA, Johns Hopkins University, 1946; DDS, University of Maryland, 1950; MS, 1969.
- Donati, Edward J.**, Associate Professor  
BA, King's College, 1951; PhD, University of Maryland 1964.
- Gearhart, John D.**, Assistant Professor  
BS, Pennsylvania State University, 1964; MS, University of New Hampshire, 1966; PhD, Cornell University, 1970.
- Guth, Lloyd**, Professor and Chairman  
BA, New York University, 1949; MD, 1953.
- Hall-Craggs, E.C.B.**, Professor and Head, Gross Anatomy  
BA, Cambridge University, 1947; MB, B.Chir., 1949; MA, 1959; PhD, London, University College, 1965.
- Hirshfield, Anne N.**, Assistant Professor  
BA, Swarthmore College, 1970; MS, University of Michigan, 1973; PhD, 1976.
- Mech, Karl F., Sr.**, Associate Professor  
BS, University of Maryland, 1932; MD, 1935.
- Oh, Tae H.**, Associate Professor  
BS, Seoul National University, 1966; MS, University of Saskatchewan, Canada, 1970; PhD, 1973.
- Oster-Granite, Mary Lou**, Assistant Professor  
BA, University of Rochester, 1969, PhD, Johns Hopkins University, 1974.
- Pumplin, David W.**, Assistant Professor  
BS, Michigan State University, 1963; PhD, University of Illinois, 1973.
- Rees, Rosemary P.**, Assistant Professor  
BSc, University of Sidney, 1967; PhD, Washington University, 1975.
- Reier, Paul J.**, Assistant Professor  
BS, Cleveland State University, 1968; PhD, Case Western Reserve, 1972.
- Rennels, Marshall L.**, Professor\*  
BS, Eastern Illinois University, 1961; MA, University of Texas Medical Branch, 1964; PhD, 1966.
- Richardson, K.C.**, Professor  
BS, University of Western Australia, 1926; MS, 1927.
- Schulter-Ellis, Frances P.**, Assistant Professor  
BS, Birmingham Southern College, 1952; MS, Emory University, 1954; PhD, George Washington University, 1971.
- Shear, Charles R.**, Associate Professor  
BS, University of Illinois, 1965; MA, Columbia University, 1967; PhD, 1969.
- Strum, Judy M.**, Associate Professor  
BS, University of Washington, 1963; PhD, 1968.
- Young, M. Wharton**, Professor  
BS, Howard University, 1926; MD, 1930; PhD, University of Michigan, 1934.
- Zalewski, Andrew A.**, Associate Professor  
BA, University of Maryland, 1962; MD, 1966.

## ANESTHESIOLOGY

- Abusrur, Sadi A.**, Instructor  
MB, ChB, University of Alexandria, Egypt, 1971.
- Ashman, Michael N.**, Assistant Professor  
BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.
- Blake, David A.**, Research Associate Professor  
PhD, University of Maryland, 1966.
- Chodoff, Peter**, Professor  
BS, Temple University, 1947; MD, Jefferson Medical College, 1951.
- Cohen, Susan M.**, Assistant Professor  
MD, University of Maryland, 1971.
- Del Rosario, Romeo S.**, Assistant Professor  
MD, Manila Central University, Philippines, 1958.

*\*effective July 1, 1979*

- Glassman, Lionel**, Clinical Associate Professor  
MD, University of Toronto, 1945.
- Goldman, Edwin J.**, Assistant Professor  
BS, University of New Brunswick, 1956; MD, Dalhousie University, 1960.
- Hasnain, Jawad U.**, Instructor  
MB, BS, King Edward Medical College, Pakistan, 1973.
- Helrich, Martin**, Professor and Chairman  
BS, Dickinson College, 1946; MD, University of Pennsylvania, 1946.
- Horwits, Gwynne L.**, Assistant Professor  
AB, Oberlin College, 1967; MD, University of Maryland, 1971.
- Joseph, Samuel I.**, Professor  
AB, Depauw University, 1939; MS, New York University, 1941; PhD, 1943; MD, Wayne University, 1947.
- Kalish, Murray A.**, Clinical Instructor  
MD, University of Maryland, 1973.
- Kaplow, Sheppard**, Assistant Professor  
MD, Dalhousie University, 1959.
- Keller, Melvin L.**, Clinical Assistant Professor  
BS, University of Illinois, 1945; DDS, University of Detroit, 1948; MD, University of Amsterdam, 1955.
- Krishnaprasad, Deepika**, Instructor  
MB, BS, B. J. Medical College, India, 1969.
- Lee, Chul J.**, Instructor  
MD, Seoul National University, 1972.
- Liteanu, Michael**, Clinical Assistant Professor  
MD, Free University of Brussels, 1949.
- Mackenzie, Colin F.**, Associate Professor\*  
MB, ChB, University of Aberdeen, 1968.
- Matjasko-Chiu, M. Jane**, Associate Professor  
BA, Mercyhurst College, 1964; MD, Medical College of Pennsylvania, 1968.
- McAslan, T. Crawford**, Clinical Professor  
MB, ChB, University of Glasgow, 1945.
- McCormack, Frank D.**, Instructor  
MD, University of El Salvador, 1970.
- Mergner, Gertrud W.**, Assistant Professor  
MD, University of Iowa, 1967.
- Mostello, Lucille A.**, Assistant Professor  
BA, Seton Hill College, 1966; MD, Johns Hopkins University, 1970.
- Parelhoff, Merrill E.**, Clinical Assistant Professor  
BS, University of Maryland, 1944; MD, 1949.
- Penafiel, Mario L.**, Assistant Professor  
MD, University of Santo Tomas, 1960.
- Selvin, Beatrice L.**, Associate Professor  
BA, University of Michigan, 1942; MD, New York Medical College, 1945.
- Shin, Baekhyo**, Associate Professor  
College of Arts and Sciences, Korea, 1961; MD, College of Medicine, Korea, 1965.
- Thomas, Padmini**, Assistant Professor  
MB, BS, Christian Medical College, India, 1966.
- Yannakakis, Zoena**, Clinical Assistant Professor  
MD, Dalhousie Medical School, Canada, 1962.

## BIOLOGICAL CHEMISTRY

- Adams, Elijah**, Professor Emeritus  
BA, Johns Hopkins University, 1938; MD, University of Rochester, 1942.
- Banerjee, Sudip K.**, Research Associate  
BS, Calcutta University, 1966; MS, 1968; PhD, 1972.
- Bartosz, Gregory**, Research Associate  
MS, University of Lodz, 1972; PhD, 1978.
- Black, Lindsay W.**, Associate Professor  
BS, University of Chicago, 1962; PhD, Stanford University School of Medicine, 1967.
- Bucci, Clara F.**, Research Associate Professor  
MC, Liceo Volpicelli, Italy, 1951; MS, University of Rome, 1956; PhD, 1964.



- Bucci, Enrico**, Professor  
MC, Liceo Mamiani, Italy, 1950; MD, University of Rome, 1956; PhD, 1965.
- Eby, Denise**, Research Associate  
BS, Saint Joseph College, 1939; MS, Catholic University, 1953; PhD, University of Maryland, 1970.
- Franchi, Dionigio**, Research Associate  
PhD, University of Padova, 1976.
- Frank, Leonard H.**, Professor  
BA, University of Oklahoma, 1950; PhD, Johns Hopkins University, 1957.
- Giri, Lallan**, Research Associate  
MS, Banaras Hindu University, 1968; PhD, University of Montana, 1974.
- Kirtley, Mary E.**, Professor  
BA, University of Chicago, 1956; MA, Smith College, 1958; PhD, Western Reserve, 1964.
- Padmanabhan, Radhakrishnan**, Assistant Professor  
BS, Vivekananda College, India, 1960; MS, Presidency College, 1962; PhD, Wayne State University, 1968.
- Polakis, Stamatis, E.**, Associate Professor  
BS, University of Athens, 1958; Oxford University, 1965.
- Pomerantz, Seymour H.**, Professor  
BA, Rice Institute, 1948; PhD, University of Texas, 1952.
- Ramaswamy, Sengoda G.**, Research Associate  
BDC, Madras University, 1965; MS, 1969; PhD, 1975.
- Rosen, Barry P.**, Associate Professor  
BS, Trinity College, 1965; MS, University of Connecticut, 1968; PhD, 1969.
- Scher, Malka**, Research Associate  
AB, Goucher College, 1963; PhD, Johns Hopkins University, 1968.
- Shamoo, Adil E.**, Professor and Chairman  
BS, University of Baghdad, 1962; MS, University of Louisville, 1965; PhD, City University of New York, 1969.
- Sorenson, Neil Eric**, Research Associate  
BA, Andrews University, 1970; PhD, University of Nebraska, 1977.
- Tsuchiya, Tomofusa**, Visiting Associate Professor  
BS, University of Tokyo, 1968; PhD, 1973.
- Waechter, Charles J.**, Associate Professor  
AA, Baltimore Junior College, 1963; BS, University of Maryland, 1966; PhD, University of Kentucky, 1971.
- Zlotnik, Gary W.**, Research Associate  
BS, Southhampton College, 1974; PhD, University of Colorado, 1978.

## BIOPHYSICS

- Abercrombie, Ronald F.**, Assistant Professor  
BS, University of North Carolina, 1968; PhD, University of Maryland at Baltimore, 1977.
- Hybl, Albert**, Associate Professor  
BA, Coe College, 1954; PhD, California Institute of Technology, 1961.
- Mullins, Lorin J.**, Professor and Chairman  
BS, University of California, 1937; PhD, 1940.
- Sjodin, Raymond A.**, Professor  
BS, California Institute of Technology, 1951; PhD, University of California, 1955.

## DIAGNOSTIC RADIOLOGY

- Andelman, Samuel M.**, Instructor  
BS, Ohio State University, 1960; MD, Chicago Medical School, 1964.
- Angell, Franklin L.**, Clinical Professor  
BS, Virginia Polytechnic Institute, 1941; MD, Medical College of Virginia, 1947.
- Arrieta, Beatriz A.**, Instructor  
BA, St. Theresa's College, Manila, Philippines, 1963.
- Bearman, Sheldon B.**, Clinical Instructor  
BA, University of Pennsylvania, 1964; MD, University of Maryland, 1968.
- Bell, James E.**, Clinical Associate Professor  
BS, Virginia Union University, 1951; MD, Howard University, 1957.
- Borrelli, Niel J.**, Clinical Instructor  
AB, Franklin and Marshall University, 1962; MD, New York Medical College, 1968.
- Brace, Kirkland C.**, Research Associate Professor  
BA, State University of Iowa, 1942; MD, University of Illinois College of Medicine, 1945.

- Bush, Joseph**, Assistant Professor  
BS, University of Maryland, 1970; MD, 1974.
- Campbell, H. James**, Clinical Instructor  
BS, University of Maryland, 1959; MD, 1963.
- Cisternino, Stephen**, Assistant Professor  
BS, Tufts University, 1970; MD, Northwestern University, 1974.
- Devabhaktuni, Prasad**, Instructor  
MD, Guntur Medical College of Andhra University, India, 1972.
- Diaconis, John N.**, Professor  
BS, University of Maryland, 1955; MD, 1961.
- Dinker, Robert E.**, Clinical Assistant Professor  
BS, University of Maryland, 1958; MD, 1963.
- Dunne, Morgan G.**, Assistant Professor  
BA, University of Dublin, 1971; MB, 1973.
- El-Shaar, Ahmad K.**, Instructor  
BS, Omayya School, Syria, 1967; MD, Aleppo University Faculty of Medicine, Syria, 1973.
- Feifarek, Christopher**, Instructor  
BS, University of Maryland, 1972; MD, 1976.
- Freedman, Matthew**, Associate Professor  
AB, University of Rochester, 1963; MD, Downstate Medical Center of Brooklyn, 1967.
- Goldman, Stanford M.**, Clinical Associate Professor  
BA, Yeshiva University of New York, 1961; MD, Albert Einstein College of Medicine, New York, 1965.
- Goodman, Lee**, Clinical Assistant Professor  
AB, Duke University, 1969; MD, University of Maryland, 1973.
- Green, John S., III**, Clinical Assistant Professor  
AB, Princeton University, 1942; MD, Johns Hopkins University, 1954.
- Haney, Phillip J.**, Assistant Professor\*  
BS, Mount St. Mary's College, 1970; MD, New York University School of Medicine, 1974.
- Houk, Theodore L.**, Assistant Professor  
BS, University of Washington, Seattle, Washington, 1957; PhD, Harvard University, 1967.
- Hyman, Nathan B.**, Clinical Assistant Professor  
BS, University of Maryland, 1942; MD, 1946.
- Kim, Ryun**, Clinical Assistant Professor  
MD, Kyung-Buk National University School of Medicine in Taegu Dorea, 1954.
- Levine, Harvey L.**, Associate Professor  
BS, Tufts University, 1960; MD, University of Vermont, 1964.
- Lewis, Henry S.**, Clinical Assistant Professor  
AB, Princeton University, 1955; MD, University of Virginia Medical School, 1959.
- McCrea, Erlinda S.**, Assistant Professor  
AB, Cebu Institute of Technology, Philippines, 1961; MD, 1966.
- Miller, Jeff D.**, Instructor  
BS, RT, University of Maryland, 1967.
- Nilprabhassorn, Prasarn**, Clinical Assistant Professor  
BS, University of Medical Sciences, Bangkok, 1956; MD, 1960.
- Ottesen, Ole E.**, Assistant Professor  
BS, University of Copenhagen, Denmark, 1948; MD, 1956.
- Rao, Krishna**, Assistant Professor  
CVG, DMS, Kilpauk Medical College of Madras University, India, 1960; MD, 1967.
- Sherman, Michael**, Clinical Instructor  
AB, Duke University, 1963; MD, University of Maryland, 1967.
- Siegelman, Stanley S.**, Clinical Professor  
AB, Cornell University, 1953; MD, State University of New York College of Medicine, 1957.
- Silverton, George**, Clinical Instructor  
BA, Yale University, 1928; MD, University of Maryland, 1932.
- Snyder, Larry A.**, Clinical Instructor  
BS, University of Maryland School of Pharmacy, 1960; MD, 1965.
- Stoffberg, Nathan**, Clinical Instructor  
BS, University of Maryland, 1956; MD, 1960.
- Thomas, William N.**, Clinical Assistant Professor  
MD, University of Virginia, 1942.
- Wallop, William H.**, Clinical Assistant Professor  
AA, Princeton University, 1949; MD, Columbia University College of Physicians and Surgeons, 1949.

- Warner, Sandra L.**, Assistant Professor  
BS, Towson State College, 1971.
- Weiner, Charles I.**, Clinical Assistant Professor  
BS, Gettysburg College, 1966; MD, University of Maryland, 1971.
- Whitley, Joseph**, Professor and Chairman  
BS, Wake Forest University, 1951; MD, Bowman Gray School of Medicine, 1955.
- Whitley, Nancy O.**, Professor  
MD, Bowman Gray School of Medicine, 1957.

## EPIDEMIOLOGY AND PREVENTIVE MEDICINE

- Adams, John D.**, Associate  
BS, Duke University, 1956; BS, Southern Methodist University, 1962; MS, Duke University, 1976.
- Apostolides, Aristide Y.**, Associate Professor  
DVM, National Veterinary School of Toulouse, France, 1963; PhD, University of North Carolina, 1970.
- Berman, Joseph**, Associate Professor  
BA, Clark University, 1957; MD, Tufts University, 1961; MPH, Johns Hopkins University, 1968.
- Booth, Rachael A.**, Instructor  
BSN, University of Maryland, 1968; MS, 1970.
- Bridwell, Margaret W.**, Assistant Professor  
BS, Tulane University, 1943; MD, Louisiana State University Medical Center, 1946.
- Canner, Paul L.**, Professor  
BA, University of Minnesota, 1960; MS, 1962; PhD, 1966.
- Carozza, Nijole**, Assistant Professor  
BS, University of Maryland, 1959; MD, 1963.
- De Hoff, John B.**, Adjunct Assistant Professor  
AB, Johns Hopkins University, 1935; MD, 1939; MPH, 1967.
- Dischinger, Patricia**, Assistant Professor  
BA, Wilson College, 1966; MSPH, University of North Carolina, 1971; PhD, 1974.
- Doub, Nancy H.**, Assistant Professor  
AB, University of North Carolina, 1969; MEd, University of Virginia, 1971; PhD, 1973.
- Dunning, Roberta H.**, Associate  
BA, Mount Saint Vincent, 1969; MEd, Syracuse University, 1971.
- East, Paul**, Assistant Professor  
LIB, Gray's Inn, London, 1966; LMSSA, University College Hospital, London, 1967; MBBS, and LRCPMRCS, conjoint, 1968; LLM, George Washington University, 1970; MPH, Johns Hopkins University, 1973.
- Eisen, Martin M.**, Professor  
BA, University of Toronto, 1957; MA, 1959; PhD, 1960.
- Entwisle, George**, Professor  
BS, University of Massachusetts, 1945; MD, Boston University, 1946.
- Ferencz, Charlotte**, Professor  
BS, McGill University, 1944; MD, 1945; MPH, Johns Hopkins University, 1970.
- Fischman, Susan H.**, Assistant Professor  
BSN, University of Michigan, 1957; MPH, Johns Hopkins University, 1965; DrPH, 1974; Certificate in Nurse-Midwifery, New York Medical College, 1966.
- Flynn, James**, Assistant Professor  
BA, Dublin University, 1960; MD, 1962; MA, 1964; MPH, Johns Hopkins University, 1970.
- Forman, Sandra A.**, Associate  
BS, The City College of New York, 1968; MA, Columbia University, 1969.
- Graves, Willard L.**, Assistant Professor  
BS, Drury College, 1962; BES, Johns Hopkins University, 1965; MS, 1967; PhD, 1972.
- Hamill, Peter V. V.**, Professor  
BA, University of Michigan, 1947; MD, 1953; MPH, Johns Hopkins University, 1962.
- Hawkins, Barbara L.**, Associate  
BS, North Carolina State University, 1962; MS, Johns Hopkins University, 1969.
- Hebel, John R.**, Associate Professor  
BS, Virginia Polytechnic Institute, 1962; PhD, 1965.
- Hulbert, Linda L.**, Assistant Professor  
BS, Saint Lawrence University, 1968; PhD, Purdue University, 1972.



- Kassel, Leon**, Assistant Professor  
MD, University of Virginia, 1949.
- Kessler, Irving I.**, Professor and Chairman  
AB, New York University, 1952; MA, Harvard University, 1955; MD, Stanford University, 1960; MPH, Columbia University, 1952; DrPH, Harvard University, 1968.
- Klimt, Christian P.**, Professor  
MD, University of Vienna, 1944; MPH, Johns Hopkins University, 1952; DrPH, 1959.
- Knatterud, Genell L.**, Professor  
BA, Macalester College, 1952; MS, University of Minnesota, 1959; PhD, 1963.
- Kohler, Helen R.**, Assistant Professor  
BS, University of Pennsylvania, 1960; MS, University of Minnesota, 1962; PhD, University of North Carolina, 1974.
- Krol, William F.**, Associate Professor  
BS, University of Chicago, 1958; MS, 1964; PhD, Johns Hopkins University, 1968.
- Krompholz, Brigita M.**, Assistant Professor  
MD, Charles University of Prague, 1957; MPH, Johns Hopkins University, 1975.
- Lamy, Peter P.**, Associate  
BSc, pharmacy, Philadelphia College of Pharmacy and Science, 1956; MSc, 1958; PhD, 1964.
- Levine, Myron M.**, Associate Professor  
BS, City College of New York, 1963; MD, Medical College of Virginia, 1967; DTPH, London School of Hygiene and Tropical Medicine, 1974.
- Lin, Ruey S.**, Assistant Professor  
MPH, Taiwan University, 1968; MD, Heidelberg University, 1970; DrPH, Johns Hopkins University, 1976.
- List, Noel D.**, Assistant Professor  
BA, New York University, 1960; MD, State University of New York, Downstate, 1965; MPH, Harvard University, 1967.
- Mabuchi, Kiyohiko**, Assistant Professor  
MD, Osaka University, 1966; DrPH, Johns Hopkins University, 1978.
- Mackenzie, Ellen J.**, Associate  
F12BA, Douglass College, 1972; MSc, Johns Hopkins University, 1975; PhD, 1979.
- Matanoski, Genevieve M.**, Associate Professor  
BA, Radcliffe College, 1950; MD, Johns Hopkins University, 1955; MPH, 1962; DrPH, 1964.
- McDonnell, Constance M.**, Associate  
BA, Duke University, 1955; MMH, Johns Hopkins University, 1977.
- Meinert, Curtis L.**, Professor  
BS, University of Minnesota, 1956; MS, 1959; PhD, 1964.
- Morton, Richard F.**, Adjunct Associate Professor  
BSC, University of London, 1943; MBBS, University of London, Middlesex Hospital, 1953; MPH, University of California, Los Angeles, 1970.
- Ouellet, Rita P.**, Instructor  
BA, Northeastern University, 1973; MPH, University of Michigan, 1975.
- Pitts, John L.**, Assistant Professor  
MD, Medical College of Virginia, 1948; MPH, Johns Hopkins University, 1959.
- Prud'Homme, Gerard J.**, Instructor\*  
BA, Johns Hopkins University, 1971; MA, 1973.
- Rubin, Judith D.**, Assistant Professor  
MD, University of Pennsylvania, 1969; MPH, Johns Hopkins University, 1975.
- Rudert, Eileen E.**, Associate  
BA, Carnegie-Mellon University, 1972; PhD, Johns Hopkins University, 1978.
- Sexton, Mary M.**, Associate Professor  
BS, University of Alabama, 1956; PhD, Johns Hopkins University, 1970.
- Sherwin, Roger W.**, Associate Professor  
BA, Cambridge University, 1953; MA, 1958; MB, BChir, 1958.
- Sorkin, Alan L.**, Professor  
BA, Johns Hopkins University, 1963; MA, 1964; PhD, 1966.
- Spicer, William S.**, Professor  
MD, University of Kansas, 1949.
- Su, Sol**, Instructor  
ScD, Johns Hopkins University, 1975.
- Tayback, Matthew**, Professor  
AB, Harvard University, 1939; MA, Columbia University, 1940; ScD, Johns Hopkins University, 1953.

**Warschawski, Peter**, Research Associate

BA, Johns Hopkins University, 1969; MA, 1973; MEd, 1974; PhD, University of Zurich, 1978.

**White, Benjamin D.**, Associate Professor

BA, Furman University, 1941; MD, Medical College of Georgia, 1946; MPH, Johns Hopkins University, 1959.

**Wilson, Phillip D.**, Assistant Professor

BA, University of Colorado, 1956; MS, University of Minnesota, 1963; PhD, Johns Hopkins University, 1970.

**Zimmerly, James G.**, Assistant Professor

BA, Gannon College, 1962; MD, University of Maryland, 1966; MPH, Johns Hopkins University, 1968; JD, University of Maryland, 1969.

## **FAMILY MEDICINE**

**Abogast, Richard C.**, Assistant Professor

BA, Thomas More College, 1961; MD, Johns Hopkins University, 1965.

**Alt, Walter J.**, Instructor

BA, University of North Carolina at Chapel Hill, 1971; MD, Tufts University School of Medicine, 1975.

**Baker, Alva S.**, Assistant Professor

AB, Western Maryland College, 1966; MD, University of Maryland, 1970.

**Bianco, Emidio A.**, Assistant Professor

BS, Loyola College, 1950; MD, Georgetown University, 1954.

**Bronushas, Joseph B.**, Assistant Professor

BS, Loyola College, 1946; MD, University of Maryland, 1950.

**Daniels, Alfred J.**, Clinical Assistant Professor

BS, Fordham College, 1964; MD, Albert Einstein College of Medicine, 1968.

**Davis, LeRoy T.**, Associate Professor

BS, Westminster College, 1948; MS, Syracuse University, 1951; PhD, 1954; MD, New York Medical College, 1961.

**Grouse, Ellen J.**, Clinical Instructor

BS, University of Puget Sound, 1969; MD, University of Washington School of Medicine, 1973.

**Guazzo, Eugene**, Assistant Professor

BS, Auburn University, 1952; MS, 1954; MD, Duke University School of Medicine, 1965.

**Guyther, J. Roy**, Associate Professor

BS, University of Maryland, 1941; MD, 1943.

**Hartmann, Peter M.**, Assistant Professor

MD, University of Maryland, 1971.

**Hill, C. Earl**, Associate Professor

BS, Loyola College, 1956; MD, University of Maryland, 1960.

**Hoopes, John M.**, Assistant Professor

BS, Pharmacy, Ohio Northern University, 1970; PharmD, Duquesne University, 1974.

**James, William T.**, Instructor

BS, University of Kansas, 1958.

**Johnson, Thomas G.**, Clinical Instructor

BS, Pennsylvania State University, 1968; MD, University of Pittsburgh, 1972.

**Khan, Misbah**, Associate Professor

BS, MD, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.

**Klein, Howard M.**, Assistant Professor

BA, Yeshiva University, 1969; MD, State University of New York, Downstate, Brooklyn, 1973.

**Kowalewski, Edward J.**, Professor and Chairman

BS, Franklin and Marshall College, 1942; MD, George Washington University, 1945.

**Krick, John P.**, Instructor

BA, Saint Meinrad College, 1968; MSW, University of Maryland, 1974.

**Muncie, Herbert L.**, Assistant Professor

BS, University of Georgia, 1968; MD, Medical College of Georgia, 1971.

**Novak, Theresa M.**, Instructor

RN, Georgetown University, 1947; BSNE, University of Maryland, 1958; MEd, University of Maryland, 1972.

**Payling-Wright, Charles R.**, Clinical Instructor

BA, University of Cambridge, 1960; MD, 1964.

**Ross, Warren M.**, Clinical Assistant Professor

BA, University of Buffalo, 1967; MD, 1971.

**Shelton, Perry S.**, Instructor

BS, University of Maryland, 1962; MD, 1964.

**Shocket, Bernard R.**, Assistant Professor

BS, University of Maryland, 1952; MD, 1954.

**Silverberg, Lawrence I.**, Clinical Instructor

BS, University of Miami, 1966; DO, Kansas City College of Osteopathic Medicine and Surgery, 1971.

**Voss, M. William**, Assistant Professor

BA, University of Colorado, 1950; MD, University of Buffalo, 1954.

**Weir W. Douglas**, Associate Professor, consultant in psychiatry

AB, Saint John's College, 1958; MD, University of Maryland, 1964.

**Welliver, Daniel I.**, Assistant Professor

BA, Western Maryland College, 1950; MD, University of Maryland, 1954.

## INTERNAL MEDICINE

**Agapitos, George**, Associate

MD, University of Athens, 1948.

**Aisner, Joseph**, Associate Professor\*

BS, Wayne State University, 1965; MS, Indiana University, 1966; MD, Wayne State University, 1970.

**Alevizatos, Aristides C.**, Assistant Professor

AB, Washington and Lee University, 1956; MD, University of Maryland, 1960.

**Al-Ibrahim, Mohamed S.**, Associate Professor\*

MB, ChB, Baghdad College of Medicine, 1967.

**Allen, James**, Professor

BA, Harvard University, 1951; MD, Johns Hopkins University, 1955.

**Amsel, Sheldon**, Clinical Associate Professor\*

BS, Pennsylvania State University, 1957; MD, Jefferson Medical School, 1961.

**Andrews, Gould A.**, Professor

AB, University of Michigan, 1940; MD, 1943.

**Antlitz, Albert**, Assistant Professor

BS, Georgetown University, 1951; MD, 1955.

**Applefeld, Jack**, Assistant Professor

BS, Washington and Lee University, 1968; MD, University of Maryland, 1972.

**Applefeld, Mark M.**, Assistant Professor

BS, Washington and Lee University, 1965; MD, University of Maryland, 1969.

**Atkins, John L.**, Assistant Professor

AB, Mount Saint Mary's College, 1932; MD, University of Pennsylvania, 1936.

**Austin, Perry**, Instructor

AB, Princeton University, 1943; MD, Columbia College of Physicians and Surgeons, 1947.

**Awalt, Lawrence F.**, Instructor

BS, Loyola College, 1956; MD, University of Maryland, 1960.

**Baker, Alva**, Assistant Professor

AB, Western Maryland College, 1966; MD, University of Maryland, 1970.

**Baum, Richard A.**, Clinical Associate Professor\*

AB, Brown University, 1964; MD, University of Maryland, 1968.

**Beekey, Cyrus E., Jr.**, Clinical Assistant Professor

BS, Ursinus College, 1964, Jefferson Medical College, 1968.

**Bereston, Eugene**, Professor

AB, Johns Hopkins University, 1933; MD, University of Maryland, 1937; MSc, University of Pennsylvania; DSc, 1955.

**Bianco, Emidio A.**, Assistant Professor

BS, Loyola College, 1950; MD, Georgetown University, 1954.

**Biggs, Richard D., Jr.**, Instructor

BA, Princeton University, 1960; MD, University of Maryland, 1964.

**Blazek, Charles**, Associate

AB, Columbia College, 1942; MD, College of Physicians and Surgeons, Columbia University, 1945.

**Blotzer, John W.**, Assistant Professor

BA, Johns Hopkins University, 1968; MD, University of Maryland, 1972.

**Breza, George M.**, Assistant Professor

BA, Temple University, 1959; MD, Jefferson Medical College, 1963.



- Bryan, Cedric W.**, Assistant Professor  
MD, University of Queensland, 1962.
- Buddemeyer, Edward U.**, Associate Professor  
BA, Gettysburg College, 1955; ScD, Johns Hopkins University, 1968.
- Burkle, Joseph H.**, Assistant Professor  
BA, University of Pennsylvania 1940; MD, 1943.
- Burnett, Joseph W.**, Professor  
AB, Yale University, 1954; MD, Harvard Medical School, 1958.
- Calia, Frank M.**, Professor  
AB, Harvard College, 1958; MD, Tufts Medical School, 1962.
- Calton, Gary**, Associate Professor  
BS, Eastern New Mexico University, 1965; MS, 1968; PhD, Texas A&M University, 1971.
- Camitta, Francine D.**, Associate  
AB, University of Pennsylvania, 1959; MD, Hahnemann Medical College, 1963.
- Caplan, Ellis S.**, Clinical Associate Professor\*  
BS, University of Maryland, 1964; MD, 1968.
- Cargo, David G.**, Research Associate.  
BS, University of Pittsburgh, 1949; MS, 1950.
- Carliner, Nathan H.**, Associate Professor\*  
BA, Johns Hopkins University, 1961; MD, 1965.
- Carozza, Nijole B.**, Assistant Professor  
BS, University of Maryland, 1961; MD, 1963.
- Chang, Paul**, Associate Professor\*  
BA, Harvard University, 1966; MD, Columbia University, 1970.
- Cheikh, Issam E.**, Instructor  
MD, Damascus University, 1968.
- Chen, Chi-Shiang**, Instructor  
MD, National Taiwan University, 1969.
- Cohen, Miriam**, Assistant Professor  
MD, University of Maryland, 1964.
- Connor, Thomas B.**, Professor  
BA, Loyola College, 1943; MD, University of Maryland, 1946.
- Cotter, Edward F.**, Professor Emeritus  
MD, University of Maryland, 1935.
- Dawson, Ben R.**, Associate Professor  
BS, BA, Hampden-Sydney College, 1958; MD, University of Virginia, 1963.
- Dear, William**, Instructor  
BS, University of Maryland, 1959; MD, 1964.
- Dembo, Donald H.**, Assistant Professor  
AB, Johns Hopkins University, 1951; MD, University of Maryland, 1955.
- DeMunecas, Anthony**, Assistant Professor  
BS, University of Valladolid, 1942; MD, Medical School of Granada, 1950.
- Diggs, Charles H.**, Assistant Professor  
BA, DePauw University, 1968; MD, Johns Hopkins University, 1972.
- Dilaimy, Mouta**, Assistant Professor  
MD, Baghdad School of Medicine, 1961.
- Donohue, Salvatore R.**, Assistant Professor  
BA, Loyola College, 1959; MD, University of Maryland, 1964.
- Dunseath, William R.**, Instructor  
BS, United States Naval Academy, 1945; MD, University of Maryland, 1959.
- Dureza, Renan J.**, Assistant Professor  
AA, University of Saint Augustine, 1959; MD, University of Santo Tomas, Philippines, 1961.
- Dutta, Sudhir K.**, Assistant Professor  
BS, S.D. College (India), 1965; MB, BS, University of Delhi, 1970.
- Ebeling, William C., III**, Assistant Professor  
BS, University of Maryland, 1943; MD, 1944.
- Elliott, Charles G.**, Instructor  
BA, Brown University, 1969; MD, University of Maryland, 1973.
- Entwisle, George**, Professor  
BS, University of Massachusetts, 1945; MD, Boston University School of Medicine, 1948.
- Epstein, Barry H.**, Assistant Professor  
AB, Columbia University, 1960; MD, Chicago Medical School, 1964.

**Espenschade, Park W., Jr.**, Instructor  
BS, George Washington University, 1958; MD, Johns Hopkins University, 1962.

**Esterhay, Robert J., Jr.**, Assistant Professor  
BA, Harvard University, 1965; MD, Case Western Reserve University, 1969.

**Farrell, Bernard P.**, Assistant Professor  
MB, BCh, BAO, University of Dublin, 1972.

**Felipa, Raul V.**, Instructor  
BS, San Marcos University, 1956; MD, 1964.

**Fiocco, Vincent J.**, Instructor  
AB, Columbia College, 1954; MD, University of Maryland, 1957.

**Fiscus, Wilbur**, Assistant Professor  
BS, Oklahoma State University, 1957; MD, Baylor, 1961.

**Fisher, Michael L.**, Associate Professor  
MD, University of Illinois, 1967.

**Fratto, Carmen A.**, Assistant Professor  
BS, University of Maryland, 1958; MD, 1962.

**Furnary, Joseph**, Associate  
BS, University of Pittsburgh, 1938; MD, University of Maryland, 1942.

**Geckler, Ronald W.**, Assistant Professor  
BS, University of Florida, 1964; MD, University of Florida, 1969.

**Glick, L. Michael**, Assistant Professor  
MD, University of Maryland, 1954.

**Goldner, Ronald**, Assistant Professor  
BS, University of Maryland, 1960; MD, 1965.

**Gonzalez, Luis F.**, Instructor  
MD, University of Maryland, 1952.

**Goodman, Jay S.**, Associate Professor  
MD, University of Maryland, 1961.

**Gould, William**, Associate  
BS, Duke University, 1961; MD, University of Maryland, 1965.

**Greisman, Sheldon E.**, Professor  
MD, New York University, 1949.

**Grenzer, Louis**, Instructor  
AB, Duke University, 1962; MD, University of Maryland, 1966.

**Hahn, Davis M.**, Assistant Professor  
BA, Johns Hopkins University, 1967; MD, University of Virginia, 1971.

**Hamilton, Bruce P.**, Associate Professor  
MB, ChB, University of Otago, New Zealand, 1960.

**Hamilton, Frank**, Assistant Professor  
BS, State University of New York; MD, Howard University, 1970.

**Hankin, Samuel**, Assistant Professor  
MD, University of Maryland, 1928.

**Hardesty, Daniel C.**, Assistant Professor  
BA, Towson State University, 1969; MD, University of Maryland, 1973.

**Hartley, Robert**, Assistant Professor  
BS, Dickinson College, 1956; MD, Jefferson Medical College, 1960.

**Hartman, Karen R.**, Research Associate  
BS, Loyola, 1973; MS, University of Pittsburgh, 1975; PhD, 1977.

**Hayes, Michael**, Assistant Professor  
BS, University of Maryland, 1959; MD, 1963.

**Heald, Felix P.**, Associate Professor  
AB, Colorado College, 1943; MD, University of Pennsylvania, 1946.

**Hernandez, Alfred D.**, Assistant Professor  
BS, University of Florida, 1969; MD, University of Miami, 1973.

**Heyman, Meyer R.**, Assistant Professor  
BS, University of Maryland, 1966; MD, 1970.

**Hijab, Wally S.**, Assistant Professor  
MB, ChB, University of Baghdad, 1952.

**Hobbins, Thomas E.**, Assistant Professor  
AB, University of Pennsylvania, 1961; MD, Hahnemann Medical College, 1965.

**Hofkin, Gerald A.**, Assistant Professor  
AB, Johns Hopkins University, 1957; MA, 1957; MD, University of Maryland, 1961.

- Hrehorovich, Victor**, Associate Professor  
BA, Harvard University, 1962; MD, 1966.
- Hughes, Timothy P.**, Research Associate.  
BS, Pennsylvania State University, 1974.
- Iber, Frank**, Professor  
BA, Miami University, 1948; MA, 1949; MD, Johns Hopkins University, 1953.
- Inayatullah, Mohammad**, Instructor  
MS, BS, King Edward Medical College, Lahore, Pakistan, 1956.
- Irani, Rustum**, Instructor  
BSc, Forman Christian College, 1959; MB, BS, King Edward Medical College, 1964.
- Janoski, Alfonso H.**, Assistant Professor  
BA, Seton Hall University, 1957; MD, Columbia University, 1961.
- Jiji, Rouben M.**, Associate Professor  
MD, Royal College of Medicine, Baghdad, Iraq, 1950.
- Johnson, David E.**, Instructor  
AB, University of North Carolina, 1961; MS, University of Maryland, 1970; PhD, 1976.
- Johnston, Gerald S.**, Professor  
BS, University of Pittsburgh, 1952; MD, 1956.
- Jones, Alfred E.**, Assistant Professor  
MD, University of Manitoba, 1959.
- Josselson, John**, Assistant Professor  
BS, University of Michigan, 1966; MD, 1970.
- Karacuschansky, Miguel**, Instructor  
BS, San Marcos University, 1962; MD, 1968.
- Karfgin, Walter**, Associate  
BS, Washington College, 1932; MD, University of Maryland, 1936.
- Karns, James R.**, Professor  
BS, University of Maryland, 1939; MD, 1940.
- Karpers, Bernard S.**, Instructor  
BS, Loyola College, 1958; MD, University of Maryland, 1962.
- Keleman, Michael**, Assistant Professor  
BS, Ursinus College, 1962; MD, University of Pennsylvania, 1966.
- Kerr, Harry D.**, Associate Professor  
BS, Maryville College, 1951; MD, Temple University 1956.
- Kilpe, Vilis**, Instructor  
BA, DePauw University, 1958; MD, Washington University, 1962.
- Knoch, H. Roebing**, Associate  
MC, Temple University, 1941.
- Kochman, Leon**, Assistant Professor  
MD, University of Pennsylvania, 1933.
- Kulle, Thomas J.**, Assistant Professor  
MS, Adelphia University, 1961; PhD, University of Cincinnati, 1972.
- Kushner, Herbert A.**, Associate Professor  
AB, Franklin and Marshall College, 1956; MD, Johns Hopkins University, 1960.
- Kuzbida, Gregory J.**, Research Associate  
BA, West Virginia University, 1973; MA, University of Maryland, 1977.
- Lawrence, George**, Instructor  
BS, Hobart College, 1959; MD, Tufts Medical College, 1963.
- Lee, Yu-Chen**, Associate Professor  
BS, Taikoku Imperial University, 1945; MD, National Taiwan University, Formosa, 1949.
- Levi, John A.**, Assistant Professor  
MB, BS, University of Sydney, 1967; MRACP, Royal Australian College of Physicians, 1970.
- Levine, Myron M.**, Associate Professor  
BS, City College of New York, 1963; MD, Medical College of Virginia, 1967.
- Lewandowski, Anthony A.**, Assistant Professor  
BS, Loyola College, 1951; MD, University of Maryland, 1955.
- Lewers, Donald T.**, Assistant Professor  
BS, University of Maryland, 1954; MD, 1960.
- Lichtenfeld, J. Leonard**, Assistant Professor  
BA, University of Pennsylvania, 1967; MD, Hahnemann Medical College, 1971.
- Lichtenfeld, Karen**, Assistant Professor  
BA, University of Pennsylvania, 1968; MD, Jefferson Medical College, 1972.
- Light, Paul D.**, Assistant Professor  
AB, Holy Cross College, 1968; MD, University of Maryland, 1972.



**Lisansky, Ephriam T.**, Professor  
BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.

**List, Noel D.**, Assistant Professor  
MD, State University of New York, 1965; MPH, Harvard University, 1967.

**Loberg, Michael D.**, Associate Professor  
BS, Trinity College, 1969; MS, Washington University, 1972; PhD, 1973.

**Magram, Martin Y.**, Assistant Professor  
BS, University of Pittsburgh, 1969; MD, University of Maryland, 1973.

**Martin, Luis G.**, Associate Professor  
MD, Madrid Medical School, 1954.

**Mazzocco, Eugene V.**, Clinical Assistant Professor  
AB, West Virginia University, 1951; MD, Medical College of Virginia, 1961.

**McConville, John**, Assistant Professor  
BA, University of Notre Dame, 1964; MD, New Jersey College of Medicine, 1968.

**McPhillips, James**, Instructor  
BA, LaSalle College, 1959; MD, State University of New York Downstate Medical Center, 1963.

**Mead, Joseph**, Professor  
AB, Loyola College, 1954; MD, University of Maryland, 1958.

**Merritt, John**, Assistant Professor  
AB, Dartmouth College, 1954; MD, Yale University, 1958.

**Mersey, James**, Assistant Professor  
AB, Amherst College, 1968; MD, Johns Hopkins University, 1972.

**Miller, Edward M.**, Instructor  
BA, University of Maryland, 1971; MD, 1975.

**Miller, Louis W.**, Assistant Professor  
BS, University of Maryland, 1963; MD, 1967; MPH, Johns Hopkins School of Public Health and Hygiene, 1969.

**Miller, Roger M.**, Assistant Professor  
AB, Dartmouth College, 1959; MD, Jefferson Medical College, 1963.

**Mills, Lawrence A.**, Assistant Professor  
BA, University of Pennsylvania, 1966; MD, University of Maryland, 1970.

**Mitchell, Thomas G.**, Associate Professor  
BS, Saint Joseph's College, 1950; MS, University of Rochester, 1956; PhD, Georgetown University, 1963.

**Moodie, Allan S.**, Assistant Professor  
DPH, University of Glasgow, 1939; MB, ChB, 1936.

**Moran, George**, Instructor  
BS, Saint John's University, 1965; MA, 1967; MD, Johns Hopkins University, 1973.

**Morrison, Samuel**, Associate Professor  
AB, Johns Hopkins University, 1925; MD, 1929.

**Morrison, Stanley**, Assistant Professor  
BS, University of Maryland, 1968; MD, 1972.

**Mueller, Paul**, Associate  
BS, Loyola College, 1951; MD, University of Maryland, 1955.

**Mugmon, Marc A.**, Instructor  
BS, Georgetown University, 1972; MD, George Washington University, 1973.

**Mullholland, Henry J.**, Assistant Professor  
BA, University of Virginia, 1955; MD, Johns Hopkins University, 1959.

**Nagel, David**, Instructor  
BS, Loyola College, 1960; MD, University of Maryland, 1964.

**Nalin, Robert D.**, Research Associate Professor\*  
AB, Cornell University, 1961; MD, Albany Medical College, 1965.

**Nolan, James J.**, Instructor  
BS, Loyola College, 1937; MD, University of Maryland, 1941.

**Notarangelo, Joseph D.**, Assistant Professor  
BA, Loyola College, 1960; MD, Georgetown University, 1964.

**Nowakowski, Andrew**, Assistant Professor  
BS, Brooklyn College, 1962; MD, Downstate Medical Center, 1966.

**O'Connell, Michael J.**, Assistant Professor  
BA, University of Minnesota, 1966; MD, 1969.

**O'Mansky, Samuel I.**, Associate  
BA, Duke University, 1952; MD, 1957.

**Owens, L. Kemper**, Instructor  
BS, Franklin and Marshall College, 1948; MD, University of Chicago, 1960.

- Pachuta, Donald M.**, Associate Professor  
BA, Niagara University, 1962; MD, State University of New York, 1966.
- Papadopoulos, Chris**, Assistant Professor  
MS, BCH, University of Alexandria, Egypt, 1956.
- Parker, Robert T.**, Associate Professor  
AB, Johns Hopkins University, 1941; MD, 1944.
- Pass, Carolyn, J.**, Clinical Assistant Professor  
BS, University of Maryland, 1962; MD, 1966.
- Pavlis, William**, Research Associate  
BA, Wake Forest, 1966; MA, 1967.
- Pearson, Frederick N.**, Instructor  
AB, Princeton University, 1964; MD, University of Maryland, 1969.
- Plotnick, Gary D.**, Assistant Professor  
AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.
- Plott, Michael F.**, Associate  
AB, Loyola College, 1960; MD, Georgetown University, 1964.
- Posner, David B.**, Assistant Professor  
BS, California Institute of Technology, 1966; MD, University of Maryland, 1970.
- Pototsky, Ronald S.**, Assistant Professor  
AB, Johns Hopkins University, 1964; MD, University of Maryland, 1968.
- Quartner, Jeffrey L.**, Instructor  
BA, Johns Hopkins University, 1971; MD, University of Maryland, 1975.
- Quinlan, James**, Assistant Professor  
BS, University of Maryland, 1962; MD, 1966.
- Ramos, Emilio**, Assistant Professor  
BA, Saint Joseph University, Lebanon, 1955; MD, 1963.
- Randal, Louis N.**, Instructor  
BS, University of Maryland, 1970; MD, 1974.
- Randall, William E., Jr.**, Instructor  
BS, University of Maryland, 1968; MD, 1972.
- Rapoport, Morton I.**, Professor  
BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.
- Raskin, Howard F.**, Associate Professor  
BA, Johns Hopkins University, 1945; MD, University of Maryland, 1949.
- Raskin, Joan**, Associate Professor  
BA, Goucher College, 1951; MD, University of Maryland, 1955.
- Reed, Julian**, Associate Professor  
BS, University of Maryland, 1948; MD, 1952.
- Rhead, John C.**, Research Associate  
BA, Dartmouth College, 1967; PhD, Stamford, 1971.
- Rivera, Luis E.**, Instructor  
BS, University of Puerto Rico, 1965; MD, 1969.
- Robbins, E. Lee**, Instructor  
BA, Dartmouth College, 1960; MD, University of Maryland, 1964.
- Robins-Browne, Roy**, Research Assistant Professor  
MB, BCH, University of Witwatersrand, 1970; DTM&H, 1973; FF, Pathology, College of Medicine of South America, 1974.
- Robinson, Harry M., Jr.**, Professor  
BS, University of Maryland, 1931; MD, 1935.
- Rogers, Elizabeth L.**, Assistant Professor  
BA, Mount Holyoke College, 1967; MD, Jefferson Medical School, 1971.
- Roig, Ramon**, Associate  
BS, University of Puerto Rico, 1955; MD, University of Maryland, 1959.
- Rusche, Edward**, Associate Professor  
MD, University of Leyden, The Netherlands, 1954.
- Russell, Robert M.**, Associate Professor  
BA, Harvard University, 1963; MD, Columbia University, 1967.
- Sacks, Henry**, Instructor  
BA, Catholic University of America, 1966; MD, University of Maryland, 1971.
- Sadler, John H.**, Associate Professor  
BS, Duke University, 1956; MD, 1960.
- Salan, Jerry**, Assistant Professor  
BA, Saint John's College, 1954; MD, University of Maryland, 1960.

- Samarodin, Charles S.**, Instructor  
BS, University of Maryland, 1964; MD, 1968.
- Samelson, Lee**, Associate  
PhB, University of Chicago, 1948; MD, Harvard Medical School, 1952.
- Sampliner, Richard E.**, Associate Professor  
BA, Yale University, 1963; MD, Western Reserve University, 1967.
- Saunders, Elijah**, Instructor  
BS, Morgan State College, 1956; MD, University of Maryland, 1960.
- Scherlis, Leonard**, Professor  
AB, Johns Hopkins University, 1942; MD, 1945.
- Schiffer, Charles A.**, Associate Professor\*  
AB, Brandeis University, 1964; MD, New York University, 1968.
- Schimpff, Stephen C.**, Professor\*  
BA, Rutgers University, 1963; MD, Yale University, 1967.
- Schmidt, Marcia C.**, Assistant Professor  
BS, University of Colorado, 1963; MD, University of Florida, 1967.
- Serpick, Arthur**, Assistant Professor  
BS, University of Maryland, 1956; MD, 1959.
- Shannon, Robert M.**, Assistant Professor  
MD, University of Maryland, 1971.
- Shapiro, Albert**, Clinical Professor  
BS, University of Maryland, 1934; MD, 1937.
- Shaw, Charles E.**, Assistant Professor  
BS, University of Maryland, 1942; MD, 1944.
- Shear, Joseph**, Associate  
BS, Pharmacy, University of Maryland, 1943; MD, 1947.
- Silverstein, Emanuel**, Assistant Professor  
BS, University of Maryland, 1957; MD, 1960.
- Simpson, David G.**, Associate Professor  
MB, BCh, Queen's University, Belfast, 1942; MD, 1950.
- Sina, Bahram**, Assistant Professor  
MD, Faculte de Medecine de Paris, 1955.
- Singleton, Robert T.**, Associate Professor  
BS, University of Maryland, 1951; MD, 1953.
- Smith, Andrew**, Associate Professor  
BS, Pennsylvania State University, 1940; MS, 1947, PhD, 1950.
- Smith, Vernon M.**, Professor  
MD, Temple University, 1949.
- Smoot, Roland T.**, Assistant Professor  
BS, Howard University, 1948; MD, 1952.
- Snyder, Merrill J.**, Professor  
BS, University of Pittsburgh, 1940; MS, University of Maryland, 1950; PhD, 1953.
- Spiggle, Wayne C.**, Clinical Assistant Professor  
AB, Berea College, 1956; BS, University of West Virginia, 1959; MD, Medical College of Virginia, 1961.
- Standiford, Harold C.**, Associate Professor  
AB, Johns Hopkins University, 1960; MD, University of Maryland, 1964.
- Steinbach, Stanley**, Associate  
AB, Johns Hopkins University, 1942; MD, University of Maryland, 1945.
- Stephenson, Richard R.**, Instructor  
BS, University of Maryland, 1958; MD, 1962.
- Stevens, Mary Betty**, Associate Professor  
BA, Vassar College, 1948; MD, Johns Hopkins University, 1955.
- Stone, John H.**, Instructor  
BS, University of Maryland, 1947; MD, 1951.
- Stoner, Robert**, Instructor  
BA, Rutgers University, 1960; MD, University of Maryland, 1964.
- Sutton, Frederick J.**, Assistant Professor  
BA, Cornell University, 1969; MD, George Washington University, 1973.
- Swisher, Kyle Y., Jr.**, Assistant Professor  
MD, University of Maryland, 1948.
- Tenney, James H.**, Assistant Professor  
AB, Harvard University, 1966; MD, 1970.



- Tigertt, William D.**, Professor  
AB, Baylor University, 1937; MD, 1938.
- Townshend, Wilfred**, Associate  
AB, Johns Hopkins University, 1936; MD, University of Maryland, 1940.
- Tudino, Mattia**, Assistant Professor  
BS, Providence College, 1953; MD, University of Bologna, Italy, 1960.
- Updike, Ralph E.**, Instructor  
BS, University of Maryland, 1958; MD, 1962.
- Valente, William**, Instructor  
BA, University of Maryland, 1970; MD, 1974.
- Van Echo, David**, Assistant Professor  
BS, Xavier University, 1969; MD, University of Maryland, 1973.
- Van Lill, Stephen J.**, Associate  
AB, Duke University, 1938; MD, University of Maryland, 1943.
- Vassar, Dean L.**, Assistant Professor  
BS, University of Maryland, 1968; MD, 1972.
- Warner, Larry J.**, Clinical Assistant Professor  
BS, University of Maryland, 1963; MD, 1967.
- Warren, John W.**, Assistant Professor  
BA, University of Michigan, 1966; MD, Harvard Medical School, 1970.
- Weber, Ralph**, Associate  
BS, Franklin and Marshall College, 1949; MD, Temple University, 1954.
- Weckesser, Barry J.**, Instructor  
BS, University of Florida, 1963; MD, 1967.
- Whitfield, Charles L.**, Associate Professor  
BA, University of North Carolina (Chapel Hill), 1960; MD, 1965.
- Wiernik, Peter H.**, Professor  
BA, University of Virginia, 1961; MD, 1965.
- Williams, Richard B.**, Clinical Assistant Professor  
BS, Duke University, 1969; MD, University of Virginia, 1973.
- Wilson, Terry L.**, Assistant Professor  
BA, Kalamazoo College, 1968; MA, State University of New York, 1970; PhD, University of Illinois, 1975.
- Wiswell, John G.**, Professor  
BA, Dalhousie University, 1938; BS, 1940; MDCM, 1943.
- Wolfe, Irving D.**, Instructor  
BA, Johns Hopkins University, 1963; MD, University of Maryland, 1968.
- Woodward, Celeste L.**, Assistant Professor  
BA, University of Aix-Marseilles, France, 1932; MD, University of Maryland, 1938.
- Woodward, Theodore E.**, Professor and Chairman  
BS, Franklin and Marshall College, 1934; MD, University of Maryland, 1938; DSc (honorary), Western Maryland College, 1950; DSc (honorary), Franklin and Marshall College, 1954.
- Yaffe, Stanley N.**, Associate Professor  
BS, University of Maryland, 1941; MD, 1944.
- Yannakakis, George D.**, Associate Professor  
MD, National University of Athens, 1956.
- Yen, Michael**, Assistant Professor  
MD, First Medical College of Shanghai, 1965.
- Young, Charles R.**, Instructor  
BA, University of Maryland, 1973.
- Zieve, Phillip D.**, Associate Professor  
AB, Franklin and Marshall College, 1954; MD, University of Maryland, 1958.
- Zizic, Thomas M.**, Assistant Professor  
BS, University of Wisconsin, 1961; MD, Johns Hopkins University, 1965.

## INTERNATIONAL HEALTH PROGRAM

- Andrade, Zilton**, Adjunct Professor  
BS, Bolegio Estadual da Bahia, Salvador, Brazil, 1945; Universidae Federal da Bahia, 1950.
- Aslamkhan, Mohammed**, Associate Professor  
BS, Punjab University, 1951; MS, 1953; DSc, Johannes Gutenberg Universitat, 1963.
- Baker, Richard H.**, Professor\*  
BS, University of Illinois, 1958; MS, 1962; PhD, 1965.

- Bhalla, Satish C.**, Associate Professor  
BS, East Punjab University, 1954; MS, 1956; MA, University of Kansas, 1963; PhD, University of Notre Dame, 1966.
- Dennis, John M.**, Vice Chancellor for Health Affairs and Dean  
BS, University of Maryland, 1943; MD, 1945
- Hayes, Curtis G.**, Research Associate  
BS, Clemson University, 1967; MS, 1970; PhD, Yale University, 1976.
- McCarthy, Vincent C.**, Associate Professor  
BA, University of Toronto, 1953; MS, University of Maryland, 1961; PhD, 1967.
- Reisen, William K.**, Assistant Professor  
BS, University of Delaware, 1967; MS, Clemson University, 1968; PhD, University of Oklahoma, 1974.
- Sakai, Richard K.**, Associate Professor  
BA, Boston University, 1959; MA, University of Hawaii, 1964; PhD, 1968.

## MICROBIOLOGY

- Camenga, David L.**, Assistant Professor  
BS, Massachusetts Institute of Technology, 1960; MS, University of Wisconsin, 1964; MD, 1965.
- Eylar, Ollie R.**, Associate Professor  
BA, University of Minnesota, 1952; MS, 1955; PhD, 1959.
- Farhang-Azad, Abdulrahman**, Assistant Professor  
DrPharm, University of Teheran, 1966; MPH, 1970; PhD, Johns Hopkins University, 1975.
- Fiset, Paul**, Professor  
BA, Laval University, Quebec, 1944; MD, 1949; PhD, University of Cambridge, England, 1956.
- Kessel, Rosslyn W.L.**, Professor  
MBBS, University College Hospital, Medical School, London, England, 1955; PhD, Rutgers University, 1960.
- Lovchik, Judith L.**, Assistant Professor  
BS, Creighton University, 1961; BA, Seattle University, 1965; MS, University of Wisconsin, 1971; PhD, 1974.
- Murphy, James R.**, Assistant Professor  
BA, Catholic University of America, 1970; PhD, University of Maryland, 1977.
- Myers, William F.**, Assistant Professor  
BA, University of Kansas, 1949; MA, 1957; PhD, 1958.
- Silverman, David J.**, Assistant Professor  
BS, Muhlenberg College, 1965; MS, University of Tennessee, 1967; PhD, West Virginia University, 1971.
- Smith, Jonathan F.**, Assistant Professor  
BA, Colby College, 1968; PhD, University of Texas, 1974.
- Traub, Robert**, Professor  
BS, College of the City of New York, 1938; MS, Cornell University, 1939; PhD, 1947.
- Wisseman, Charles L., Jr.**, Professor and Chairman  
BA, Southern Methodist University, 1941; MS, Kansas State College, 1943; MD, Southwestern Medical College, 1946.

## NEUROLOGY

- Atkinson, Matthew**, Clinical Assistant Professor  
BA, Princeton University, 1948; MD, Johns Hopkins University, 1952.
- Barnett, Leslie**, Assistant Professor  
BS, University of Maryland, 1967; MD, 1971.
- Belaga, A. Gary**, Clinical Instructor  
BS, University of Maryland, 1966; MD, 1970.
- Camenga, David L.**, Assistant Professor  
BS, Massachusetts Institute of Technology, 1960; MS, University of Wisconsin, 1964; MD, 1965.
- Capozzoli, Nicholas**, Clinical Instructor  
BS, Manhattan College, 1964; MD, New York University, 1968.
- Chipman, Martin**, Clinical Assistant Professor  
AB, Harvard University, 1953; MD, Baylor College of Medicine, 1960.
- Eckholdt, John W.**, Clinical Assistant Professor  
AB, University of Minnesota, 1959; BS, 1961; MD, 1963.
- Fujimoto, Katsukuni**, Visiting Instructor  
BS, Osaka City University, 1971; MD, 1975.

- Genut, A. Allan**, Clinical Instructor  
BS, University of Maryland, 1967; MD, 1971.
- Grady, Patricia**, Research Associate  
BS, (nursing), Georgetown University, 1967; MS, (nursing), University of Maryland, 1968; PhD, 1976.
- Gregory, Thomas**, Research Associate  
BA, Williams College, 1965; MS, State University of New York at Buffalo, 1972; PhD, 1978.
- Gumbinas, Maria**, Assistant Professor  
BA, University of Chicago, 1963; MD, 1966.
- Hulfish, Barbara**, Instructor  
BA, American University, 1944; MD University of Rochester, 1952.
- Khurana, Ramesh K.**, Assistant Professor  
MB, BS, Government Medical College, Amritsar, India, 1969.
- Knudsen, James**, Research Associate  
BS, University of Maine at Orono, 1968; MS, University of New Hampshire, 1970; PhD, University of Georgia, 1974.
- Koski, Carol Lee**, Assistant Professor  
BA, Goucher College, 1964; MD, University of Maryland, 1968.
- Kramer, Morton D.**, Clinical Assistant Professor  
AB, (pharmacy), University of Maryland, 1950; MD, 1955.
- Law, William**, Clinical Instructor  
AB, Loyola College, 1957; MD, University of Maryland, 1962.
- Max, Stephen R.**, Associate Professor  
BS, University of Rhode Island, 1962; PhD, 1966.
- Mayer, Richard F.**, Professor and Acting Chairman  
BS, Saint Bonaventure College, 1950; MD, University of Buffalo, 1954.
- Merlis, Jerome K.**, Professor Emeritus  
BS, University of Louisville, 1933; MD, 1937; MS, 1938.
- Mosser, Robert S.**, Assistant Professor  
BS, University of Maryland, 1949; MD, 1951.
- Nassem, Syed**, Research Associate  
BS, Aligarh University, 1963; MS, 1965; PhD, 1968.
- Nelson, Erland**, Professor  
AB, Carthage College, 1947; MD, Columbia University College of Physicians and Surgeons, 1951; PhD, University of Minnesota, 1961.
- Oleynick, Anatol H.**, Clinical Assistant Professor  
AB, University of Pennsylvania, 1952; MD, University of Chicago, 1956.
- Plantholt, Barbara**, Research Associate  
BS, Mount Saint Agnes College, 1965; MT (ASCP), Mercy Hospital School of Medical Technology, 1965.
- Price, Thomas R.**, Professor  
BA, University of Virginia, 1956; MD, 1960.
- Reggia, James**, Assistant Professor\*  
BS, University of Maryland, 1971; MD, 1975.
- Rennels, Marshall L.**, Professor\*  
BS, Eastern Illinois University, 1961; MS, University of Texas Medical Branch, 1964; PhD, 1966.
- Robbins, Solomon**, Clinical Instructor  
BA, University of Florida, 1961; MD, Medical College of Georgia, 1965.
- Salan, Sandra**, Clinical Instructor  
BS, University of Maryland, 1965; MD, 1966.
- Schilder, Peter**, Clinical Instructor  
BS, University of Utah, 1960; MA (experimental psychology), Adelphi College, 1962; PhD (physiological psychology), 1965; MD, Downstate Medical Center, 1966.
- Sutton, Granger G.**, Associate Professor  
BS, Massachusetts Institute of Technology, 1952; MD, University of Maryland, 1958.
- Taylor, Richard**, Clinical Instructor  
BA, Johns Hopkins University, 1971; MD, University of Maryland, 1975.
- Teitelbaum, Harry A.**, Clinical Assistant Professor  
BS, University of Maryland, 1929; PhD, 1936.
- Toop, James B.**, Instructor  
BS, University of Edinburgh, 1969; PhD, 1974.
- Toro, Rodrigo**, Assistant Professor  
AB, Colegio "Deogracias Cardona", Columbia, 1952; MD, Universidad Nacional, 1959.



**Van Buskirk, Charles**, Professor

AB, Westminster College, 1939; MS (microanatomy), Saint Louis University, 1941; PhD, University of Minnesota, 1943; MD, Albany Medical College, 1947; MS (neurology), University of Minnesota, 1953.

**Wagner, Arthur M.**, Assistant Professor

BA, University of Pennsylvania, 1966; MD, University of Maryland, 1970.

**Weisman, Richard**, Clinical Instructor

BA, Harvard University, 1969; MD, University of Maryland, 1973.

**Wexler, Ira**, Clinical Instructor

BS, Rensselaer Polytechnic Institute, 1957; MS, Downstate Medical Center, 1959; PhD, 1963; MD, 1966.

**Young, Joseph**, Research Associate

BS, University of Maryland, 1970; MS, 1973; PhD, 1976.

## **OBSTETRICS AND GYNECOLOGY**

**Albrecht, Eugene D.**, Assistant Professor

BS, University of Vermont, 1965; MS, 1967; PhD, Rutgers University, 1972.

**Allen, Willard M.**, Professor

BS, Hobart College, 1926; MS, University of Rochester, 1929; MD, 1932.

**Ances, Isadore G.**, Professor

BS, University of Maryland, 1956; MD, 1959.

**Barnett, Robert M.**, Assistant Professor

BS, College of Charleston, 1951; MD, University of Maryland, 1955.

**Cornbrooks, Ernest I., Jr.**, Associate Professor

AB, Saint John's College, 1931; MD, University of Maryland, 1935.

**Didolkar, Mukund S.**, Clinical Assistant Professor\*

MBBS, Nagpur University, India, 1965; MS (Surg.), 1968.

**Diggs, Everett S.**, Assistant Professor

BS, University of Maryland, 1934; MD, 1937.

**Durkan, James P.**, Associate Professor

AB, Loyola College, 1955; MD, University of Maryland, 1959.

**Fajer, Abram B.**, Professor

BS, Sao Paulo College, 1945; MD, University of Sao Paulo, 1951.

**Frieman, Sylvan**, Clinical Assistant Professor

BS, University of Maryland, 1949; MD, 1953.

**Granados, Juan L.**, Assistant Professor

MD, University of Madrid, 1966.

**Haskins, Arthur L.**, Professor and Chairman

BA, University of Rochester, 1938; MD, 1943.

**Kaltreider, D. Frank**, Professor

BA, Johns Hopkins University, 1933; MD, University of Maryland, 1937.

**Kho, Ronald L. S.**, Instructor

MD, University of Indonesia, 1963.

**Levin, Norman**, Associate

MD, University of Maryland, 1947.

**Middleton, Edmund B.**, Associate Professor

MD, University of Maryland, 1949.

**Moszkowski, Erica F.**, Assistant Professor

BS, Liceo Nacional de Senoritas NI, 1946; MD, University of Buenos Aires, 1954.

**Mould, Leslie L.**, Assistant Professor

MD, Queen's University, Ontario, 1952.

**Munford, Richard S.**, Associate Professor

BA, University of Rochester, 1951; MD, Yale University, 1951.

**Ongkasuwan, Chaweng**, Clinical Instructor

MD, Mahidol University, 1967.

**Raiti, Salvatore**, Associate Professor

MB, BS, University of Queensland, 1958; DCH, Institute of Child Health, London, 1961; MRCP, University of Glasgow, 1962.

**Randall, Louis L.**, Instructor

BS, Morgan State College, 1953; MD, University of Maryland, 1957.

**Rivera-Rivera, Ernesto**, Assistant Professor

MD, University of Maryland, 1966.

**Schwartz, Benson C.**, Assistant Professor

MD, University of Maryland, 1948.

- Siegel, Isadore A.**, Professor Emeritus  
AB, Johns Hopkins University, 1919; MD, 1923.
- Sindler, Michael J.**, Clinical instructor  
BA, University of Maryland, 1968; MD, 1972.
- Toher, James E.**, Clinical Assistant Professor  
BS, Providence College, 1950; MD, Georgetown University Medical School, 1954.
- VillaSanta, Umberto**, Professor  
MD, University of Padua, Italy, 1950.
- Wartanian, Ghevont W.**, Clinical Instructor  
MD, Yerevan State Medical Institute, 1972.
- Wilson, Fitzpatrick**, Associate Professor  
BS, The City College, New York, 1953; MD, State University of New York, Downstate Medical Center, 1957.
- Wolk, Barry M.**, Clinical Instructor  
BA, Ohio State University, 1968; MD, University of Maryland, 1972.

## OPHTHALMOLOGY

- Amernick, Stanley J.**, Clinical Instructor  
BS, University of Maryland, 1969; MD, 1973.
- Aquilla, Joseph**, Clinical Instructor  
AB, Saint Michaels College, 1967; MD, University of Maryland, 1971.
- Braver, David A.**, Clinical Assistant Professor  
BS, Ohio State University, 1957; MD, University of Maryland, 1963.
- Brull, Stanley**, Clinical Instructor  
BS, Loyola College, 1964; MD, University of Maryland, 1969.
- Bruther, William F.**, Clinical Instructor  
BS, Mount Saint Mary's College, 1961; MD, University of Maryland, 1966.
- Creamer, John J.**, Clinical Assistant Professor  
BS, University of Maryland, 1950; BS (pharmacy), 1953; MD, New York Medical College, 1960.
- Cryer, Theodore H.**, Clinical Instructor  
BA, Taylor University, 1968; MD, University of Maryland, 1972.
- Ehrlich, Gary L.**, Clinical Instructor  
BS, Dickinson College, 1961; MD, University of Maryland, 1965.
- Feinberg, Gilbert N.**, Clinical Assistant Professor  
BS, Johns Hopkins University, 1955; MD, University of Maryland, 1959.
- Gambrill, John Jr.**, Clinical Instructor  
BS, Howard University, 1966; MD, University of Maryland 1972.
- Goldberg, Julian R.**, Clinical Assistant Professor  
AB, Johns Hopkins University, 1952; MD, University of Maryland, 1955.
- Gots, Barbara A.**, Clinical Instructor  
AB, Temple University, 1964; MA, 1966; MD, University of Southern California, 1973.
- Hameroff, Stephen B.**, Clinical Associate Professor  
BS, University of Maryland, 1962; MD, 1966.
- Jones, Thomas C.**, Clinical Assistant Professor  
BS, Florida A & M University, 1942; MD, Meharry Medical College, 1945.
- Kasper, Robert L.**, Clinical Assistant Professor\*  
BS, University of Miami, 1960; MD, 1963.
- Katzen, Leeds E.**, Clinical Associate Professor  
BS, University of Maryland, 1958; MD, 1964.
- Kaur, Suringder**, Clinical Instructor  
BA, Punjab University, 1957; MD, 1963.
- Kidwell, Earl D.**, Clinical Assistant Professor  
BA, Columbia University, 1969; MD, Johns Hopkins University, 1973.
- Kohlhepp, Paul A.**, Clinical Instructor  
BS, Loyola College, 1958; MD, University of Maryland, 1962.
- Kolker, Richard J.**, Clinical Instructor  
BS, University of Pennsylvania, 1965; MD, University of Maryland, 1970.
- Kronthal, Alfred**, Clinical Instructor  
BS, Loyola College, 1957; MD, University of Maryland, 1961.
- Lakhanpal, Vinod**, Assistant Professor  
MBBS, Medical College of Amritsar, 1967; MS, Postgraduate Institute of Medical Education and Research, Chandigarh, 1971.

- Leffler, Martha B.**, Clinical Assistant Professor  
BS, Iowa State University, 1962; MD, Johns Hopkins University, 1966.
- Meisels, Alfred**, Clinical Assistant Professor  
MD, University of Vienna, 1958.
- Miller, Gerald A.**, Clinical Instructor  
BS, University of Maryland, 1957; MD, 1961.
- Nirankari, Verinder S.**, Assistant Professor  
MBBS, Medical College of Amritsar, 1968; DOMS, 1971.
- O'Rourke, Thomas R., Jr.**, Clinical Instructor  
BS, University of Maryland, 1957; MD, 1962.
- Parran, Jay N.**, Clinical Assistant Professor\*  
BS, Case Institute, 1965; MD, University of Maryland, 1970.
- Richards, Richard D.**, Professor and Chairman  
AB, University of Michigan, 1948; MD, 1951; MSc, State University of Iowa, 1957.
- Ross, Jerome**, Clinical Assistant Professor  
BS, University of Maryland, 1957; MD, 1960.
- Schocket, Stanley S.**, Professor  
BS, University of Maryland, 1955; MD, 1959.
- Silver, Allen E.**, Clinical Instructor  
BA, Wayne State University, 1959; MD, 1963.
- Susel, Richard N.**, Clinical Assistant Professor  
BS, University of Maryland, 1962; MD, 1966.
- Tittel, Paul**, Research Associate  
BS, Johns Hopkins University, 1957.
- Varma, Shambhu**, Professor\*  
BS, University of Allahabad; MSc, 1957; PhD, 1964.
- Weiner, Barry M.**, Instructor  
AA, Baltimore Junior College, 1963; BS, Pennsylvania College Optometry, 1965; OD, 1967.
- Winter, Brian J.**, Clinical Instructor  
BS, University of Maryland, 1970; MD, 1972.
- Young, Lois A.**, Associate Professor  
BS, Howard University, 1956; MD, University of Maryland, 1960.

## **PATHOLOGY**

- Adams, John E.**, Assistant Professor  
BS, University of Maryland, 1954; MD, 1956.
- Adelberg, Elaine R.**, Research Associate  
BS, University of Pittsburgh, 1953.
- Albites, Victor**, Instructor  
MD, University of San Marcos, Lima, Peru, 1957.
- Anthony, Ronald L.**, Associate Professor (clinical immunology)  
BA, Susquehanna University, 1961; PhD, University of Kansas, 1965.
- Arstila, Antti U.**, Associate Professor  
MD, University of Turku, Finland, 1965; PhD, 1966.
- Bahr, Gunter F.**, Professor  
MD, University of Wurzburg, Germany, 1952.
- Baldwin, Anna**, Instructor  
BS, George Washington University, 1973.
- Barrett, Lucinda**, Assistant Professor\* (tissue culture)  
BA, University of Connecticut, 1963; MA, University of Kansas, 1966.
- Bauer, Frederick W.**, Assistant Professor  
BA, University of Colorado, 1957; MD, Albany Medical College, 1962.
- Berezesky, Irene K.**, Research Associate  
BA, Boston University, 1958.
- Bhagavan, Belur S.**, Assistant Professor  
MBBS, R. G. Kar Medical College, Calcutta, 1958.
- Block, Ronald M.**, Associate  
BA, University of Alaska, 1967; MS, University of North Dakota, 1972; PhD, 1974.
- Breitnecker, Rudiger**, Assistant Professor  
MD, University of Vienna, 1954.
- Brown, Charles**, Assistant Professor  
AB, Princeton University, 1954; MD, University of Pennsylvania, 1958.



- Caplan, Yale H.**, Clinical Associate Professor\*  
BS, University of Maryland, 1963; PhD, 1968.
- Cartwright, Willie Q.**, Assistant Professor  
BS, Howard University, 1959; MS, State University of New York, 1972.
- Chang, Seung-Han**, Instructor  
BS, Kyung Hec University, Seoul, Korea, 1963; MS, 1969.
- Cherng, Ai-Shuan S.**, Instructor  
BS, National Taiwan University, Republic of China, 1969; MS, Indiana University, 1974.
- Costello, Dolores C.**, Instructor  
BS, Mount Saint Agnes College, 1969.
- Cranley, Robert E.** Assistant Professor  
BS, University of Maryland, 1956; MD, 1958
- Crooks, Clint R.**, Assistant Professor  
BS, University of Maryland, 1969; PhD, 1976.
- Cummings, Benjamin E.**, Associate  
BS, California Institute of Technology, 1955; MS, 1956; AeE, 1957; PhD, 1962.
- David, Raffaele**, Assistant Professor\*  
MD, University of Bologna, 1963.
- Dawson, R. Ben**, Professor  
AB, BS, Hampden-Sydney College, 1958; MD, University of Virginia, 1963.
- Dhar, Jyotsna K.**, Assistant Professor  
BS, Calcutta University, 1956; MD, Nilratan Sircar Medical College, 1962.
- Dixon, Ann M.**, Assistant Professor  
MD, University of Edinburgh, 1966.
- Dobrow, David A.**, Assistant Professor  
BA, University of Virginia, 1961; MD, 1965.
- Duncan, Craig E.**, Instructor  
BS, University of Washington, 1965; MD, 1969.
- El Gerzawi, Shadia M.**, Research Associate  
MB, BCh, Cairo University, 1969; MS, 1974, PhD, 1978.
- Fazekas, Victor A.**, Assistant Professor  
MD, George Washington University, 1960.
- Fisher, Russell S.**, Professor (forensic pathology)  
BS, Georgia School of Technology, 1937; MD, Medical College of Virginia, 1942.
- Goldblatt, Peter J.**, Professor  
AB, Case Western Reserve University, 1955; MD, 1959.
- Graham, Richard R.**, Assistant Professor  
BS, Louisiana University, 1968.
- Griggs, E. Allen**, Assistant Professor  
BA, Virginia Military Institute, 1964; MD, University of Virginia, 1968.
- Grimley, Philip M.**, Professor  
BS, The City College of New York; 1956; MD, Albany Medical College, 1961.
- Guard, Hormez R.**, Assistant Professor  
MBBS, University of Bombay, 1948; MD, 1951.
- Guerin, Paul F.**, Assistant Professor, Forensic pathology  
AB, Wittenburg College, 1942; MD, University of Pennsylvania, 1945.
- Hall-Craggs, Mary**, Clinical Associate Professor\* (autopsy)  
MBBS, The London School of Medicine for Women, 1950.
- Harmening, Denise M.**, Instructor  
MS, MT(ASCP), BS, University of Maryland, 1974; MS, 1976.
- Harr, Robert R.**, Instructor  
BS, Kent State University, 1971; MS, Ohio State University, 1976.
- Heatfield, Barry M.**, Assistant Professor  
BA, University of California, 1962; PhD, 1969.
- Henriksen, Bruce B.**, Associate  
BS, University of Florida, 1964; MS, 1966; PhD, 1968.
- Hess, Helene**, Associate  
BS, Saint Joseph College, 1965.
- Hicken, William J.**, Assistant Professor  
BA, Loyola College, 1954; MD, University of Maryland, 1958.
- Hillman, Elizabeth A.**, Assistant Professor (electron microscopy)  
BA, Russell Sage College, 1960; PhD, Duke University, 1972.

- Hinton, David**, Assistant Professor  
BS, Mississippi College, 1965; MS, University of Mississippi, 1967; PhD, 1969.
- Iseri, Oscar A.**, Professor  
BS, Antioch College, 1952; MD, Harvard University, 1956.
- Janss, Douglas H.**, Associate Professor  
BA, Southwestern University, Tennessee, 1963; PhD, University of Tennessee, 1969.
- Jiji, Rouben M.**, Assistant Professor  
MD, Royal College of Medicine, Baghdad, Iraq, 1950.
- Jiji, Violet**, Assistant Professor  
MD, Royal College of Baghdad, 1950.
- Jones, Raymond T.**, Associate Professor\*  
BS, Old Dominion University, 1968; MS, University of Delaware, 1970; PhD, University of Maryland, 1974.
- Kahng, Myong W.**, Assistant Professor (biochemistry)  
BS, Seoul National University, 1957; MS, University of Maryland, 1962; PhD, 1967.
- Kaiser, Hans E.**, Research Associate Professor\*  
PhD, University of Tuebingen, 1958.
- Kim, Kook M.**, Associate Professor  
MD, Seoul National University, 1960.
- Kime, Watson P.**, Assistant Professor  
BSc, University of Wales, 1950; MB, BCH, Welsh National School of Medicine, 1953.
- King, Walter B., Jr.**, Assistant Professor  
AB, University of California, 1948; MD, Stanford University, 1954.
- Knoblock, Edward C.**, Associate Professor (clinical chemistry)  
AB, Western State College of Colorado, 1942; MS, University of Maryland, 1959.
- Koch, Thomas R.**, Assistant Professor  
BS, Lebanon Valley College, 1966; PhD, University of Maryland, 1970.
- Kolaja, Gerald J.**, Associate  
BS, Michigan State University, 1965; DVM, 1967; PhD, University of Maryland, 1977.
- LaBrosse, Elwood H.**, Associate Professor  
MD, Northwestern University, 1948; PhD, University of Texas, 1956.
- Laiho, Kauno U.**, Associate Professor  
MD, University of Helsinki, 1967.
- Lancaster, Robert G.**, Assistant Professor  
BS, Gonzaga University, 1952; MD, University of Maryland, 1955.
- Lindado, Ramiro R.**, Assistant Professor  
MD, Javeriana University, 1968.
- Ling, Virginia**, Assistant Professor  
MD, University of Madrid, University of Zaragoza, Spain, 1961.
- Lucas, Carolyn C.**, Instructor  
BSMT, College of Charleston, 1973; MAT, The Citadel, 1976.
- Masters, Jason M.**, Associate Professor and Director, Medical Technology Program  
BA, High Point College, 1951; MA, Sul Ross State College, 1956; PhD, University of Maryland, 1965.
- McDowell, Elizabeth M.**, Associate Professor  
BVet Med, Royal Veterinary College, University of London, 1964; BA, University of Cambridge, 1968; PhD, 1971.
- Merenyi, Dezso K.**, Associate Professor  
MD, Pecs, Hungary, 1944.
- Mergner, Wolfgang J.**, Professor  
MD, Justus Liebig University, Giessen, Germany, 1961; PhD, Duke University, 1975.
- Merryman, Ginny M.**, Associate  
BA, Western Maryland College, 1976; MS, University of Maryland, 1978; PA, 1978.
- Middlebrook, Gardner**, Professor  
AB, Harvard College, 1938; MD, 1944.
- Moore, Samuel**, Clinical Associate  
BS, Morgan State College, 1953; MS, University of California, 1973.
- Morton, F. Bert**, Assistant Professor  
BA, Case Western Reserve University, 1963; MD, University of Maryland, 1968.
- Mostofi, Fathollah F.**, Professor  
BS, University of Nebraska, 1935; MD, Harvard Medical School, 1939.
- Mummert, Kenneth L.**, Assistant Professor (cytopathology)  
BS, Pennsylvania State, 1966; MD, Hahnemann Medical College, 1970.

- Nipper, Henry**, Assistant Professor  
AB, Emory University, 1960; MS, Purdue University, 1966; PhD, University of Maryland, 1971.
- Novros, Joel S.**, Associate  
BA, University of California, 1961; MS, San Diego State College, 1967; PhD, University of California, 1971.
- Orbegoso, Carlos M.**, Assistant Professor  
MD, San Marcos University, 1961.
- Orloff, Kenneth G.**, Clinical Assistant Professor  
BS, Pennsylvania State University, 1969; MS, 1971; PhD, University of California, 1976.
- Oster, Walter F.**, Associate Professor  
BS, University of Maryland, 1956; MD, 1961.
- Pawar, Vinayak B.**, Instructor  
BS, University of Bombay, 1966; MS, University of Missouri, 1973; PhD, University of Kentucky, 1977.
- Pendergrass, Robert**, Research Associate  
University of North Carolina.
- Penttila, Matti A.**, Assistant Professor  
MD, University of Helsinki, 1964.
- Petrucci, John**, Assistant Professor  
BS, Fordham University, 1952; MD, University of Geneva, 1957.
- Phelps, Patricia C.**, Research Associate  
AB, Brown University, 1952.
- Pool, Charlotte R.**, Instructor (histopathology)  
University of Louisville.
- Purnell, Dallas M.**, Research Associate Professor\*  
BS, University of Puget Sound, 1963; MS, Idaho State University, 1965; PhD, University of Washington, 1971.
- Rasmussen, Peter**, Professor  
MD, Temple University, 1952.
- Reggiardo, Zulema R.**, Assistant Professor  
BS, College National Rosario, Argentina, 1951; PhD, University National of Litoral, Argentina, 1958.
- Resau, James H.**, Research Associate  
BA, Western Maryland College, 1968; MS, University of Maryland, 1978.
- Rubin, H. Robert**, Assistant Professor  
BA, Emory University, 1967; MD, University of Florida, 1971.
- Saladino, Andrew J.**, Associate Professor  
BS, Georgetown University, 1960; MD, 1964.
- Sanefuji, Hayato**, Assistant Professor  
MD, Yamaguchi University, 1969.
- Sato, Toshihide**, Research Associate  
MD, Nagoya City University, 1961; MS, 1963.
- Schurch, Walter**, Associate  
MD, University of Zurich, 1968.
- Seiguer, Alberto C.**, Assistant Professor  
MD, University of Buenos Aires, 1967.
- Seigneur, Amalia E.**, Assistant Professor  
MD, University of Buenos Aires, 1962.
- Shamsuddin, Abulkalam M.**, Instructor  
HSc, Notre Dame College, Bangladesh, 1965; MD, University of Dacca, 1972.
- Sheehan, John P.**, Assistant Professor  
AB, Seton Hall University, 1961; MD, New Jersey College of Medicine, 1956.
- Sherrer, Edward L., Jr.**, Assistant Professor  
BS, Bowling Green State University, 1952; MSc, Ohio State University, 1953; MD, 1958.
- Shin, Moon L.**, Associate Professor  
MD, Soo Do Medical College, Seoul, Korea, 1962.
- Smith, Andrew G.**, Professor (microbiology)  
BS, Pennsylvania State College, 1940; MS, University of Pennsylvania, 1947; PhD, 1950.
- Smith, Mary A.**, Research Associate  
BA, West Virginia University, 1961; MS, 1963.
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## PEDIATRICS

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## PHYSIOLOGY

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PhD, Harvard University, 1928.
- Tiffert, Teresa**, Assistant Professor  
BS, Universidad Peruana Cayetano Heredia, 1971; MD, 1972; MS, 1973.
- Urbaitis, Barbara K.**, Assistant Professor  
BA, Hunter College, 1960; MA, 1965; PhD, Cornell University, 1968.
- Wise, Phyllis, M.**, Assistant Professor  
BA, Swarthmore College, 1967; MA, University of Michigan, 1969; PhD, 1972.

#### PRIMARY CARE PROGRAMS

- Go, Howard T.**, Associate Professor  
DEng, University of Technology, 1958.
- Spicer, William S., Jr.**, Professor of Medicine and Director  
BS, University of Southern California, Los Angeles, 1944; MD, University of Kansas, 1949.

#### *Medicine*

- Al-Ibrahim, Mohamed S.**, Associate Professor\*  
GCE, Oxford University, 1962; MB, ChB, Baghdad College of Medicine, 1967.
- Amsel, Sheldon**, Associate Professor\*  
BS, Pennsylvania State University, 1957; MD, Jefferson Medical School, 1961.
- Gross, Herbert S.**, Professor  
BA, Yeshiva University, 1956; MD, Albert Einstein College of Medicine, 1960.
- Hardesty, Daniel C.**, Assistant Professor  
BA, Towson State College, 1969; MD, University of Maryland, 1973.
- Kushner, Herbert A.**, Associate Professor  
AB, Franklin and Marshall College, 1956; MD, Johns Hopkins University, 1960.
- Moran, Marguerite T.**, Assistant Professor  
BS, Saint Johns University, 1965; MD, New York Medical College, 1969.
- Quinlan, James A.**, Assistant Professor  
BS, University of Maryland, 1962; MD, 1966.
- Randall, Louis N.**, Instructor  
BS, University of Maryland, 1970; MD, 1974.
- Rapoport, Morton I.**, Professor  
BS, Franklin and Marshall College, 1956; MD, University of Maryland, 1960.
- Redmond, Anne C.**, Assistant Professor  
RN, Johns Hopkins Hospital, 1965; BA, 1969; MD, 1972.
- Whitfield, Charles L.**, Director  
BA, University of North Carolina, 1960; MD, 1965.

#### *Nursing*

- Booth, Rachel Z.**, Associate Professor\*  
BSN, University of Maryland School of Nursing, 1968; MS, 1970; PhD, 1978.



- Maguire, Maureen**, Assistant Professor  
Diploma, Thomas Jefferson Hospital School of Nursing, 1963; BSN, University of Pennsylvania School of Nursing, 1969; MSN, 1971.
- Norberg, Beatrice**, Instructor  
AA, Prince Georges College, 1972; BS, Columbia Union College, 1974.

#### *Pediatrics*

- Khan, Misbah**, Associate Professor  
MBBS, King Edward Medical College, 1952; MPH, Johns Hopkins University, 1970.

#### *Pharmacy*

- Kerr, Robert A.**, Associate Professor  
BA, University of California at Davis, 1966; PharmD, University of California, San Francisco, 1970.
- Wiser, Thomas H.**, Associate Professor\*  
BS, University of Minnesota, 1971; PharmD, 1973.

#### *Social Work*

- Fine, Judith**, Assistant Director  
BA, University of Maryland, 1960; MSW, 1965.

### PSYCHIATRY

- Abbas, Mahmoud F.**, Clinical Instructor  
MD, Ein Shams University, Cairo, Egypt, 1955.
- Abosch, Estels**, Clinical Instructor  
Licenciada en Psicología, Universidad de Buenos Aires, 1963; Facultad de Filodofia y Letros Universidad de Buenos Aires, 1970.
- Albright, Mary J.**, Assistant Professor (clinical psychology)  
BA, Saint Mary of the Springs College, 1954; MA, Fordham University, 1956; PhD, 1966.
- Anderson, Richard H.**, Clinical Assistant Professor\*  
BS, University of Delaware, 1961; MD, Temple University, 1966.
- Arana, Jose**, Associate Professor  
MD, Universidad Peruana Cayetano Heredia, 1967.
- Arbogast, Richard C.**, Clinical Instructor  
BA, Thomas More College, 1961; MD, Johns Hopkins University, 1965.
- Arnold, William H.**, Clinical Instructor  
MD, University of Rochester, 1957.
- Ault, Virginia L.**, Assistant Professor  
RN, Union Memorial Hospital, 1945; BS, University of Maryland, 1950; MD, University of Vermont, 1959.
- Ascher, Edward**, Clinical Associate Professor  
BS, Washington University, 1942; MD, 1942.
- Bacher, Norman M.**, Assistant Professor  
BS, University of Maryland, 1949; MD, Chicago Medical School, 1954.
- Bachrach, Leona**, Associate Professor  
BA, Kent State University, 1953; MA, 1954; PhD, University of Connecticut, 1960.
- Balis, George U.**, Professor  
MD, National University of Athens, 1954.
- Baloch, Modammad H.**, Instructor  
MD, Punjab University, Pakistan, 1970.
- Barcik, David J.**, Assistant Professor (psychology)  
BS, Western Michigan University, 1960; MA, 1961; PhD, University of Delaware, 1969.
- Barry, Ronald M.**, Clinical Assistant Professor  
MD, Melbourne University, 1963.
- Bartemeier, Leo**, Clinical Professor  
BA, Catholic University of America, 1914; MA, 1916; MD, Georgetown Medical School, 1920.
- Bartko, John J.**, Research Associate Professor  
BA, University of Florida, 1959; MS, Polytechnic Institute, 1961; PhD, 1962.
- Beran, Bohumil**, Assistant Professor  
MD, Charles University in Prague, Czechoslovakia, 1964.
- Bergmann, Barbara A.**, Clinical Instructor  
BS, American University, 1967; MD, University of California at San Francisco, 1971.
- Berman, Merrill I.**, Clinical Instructor  
AB, Johns Hopkins University, 1958; MD University of Maryland, 1962.

- Bisco, Michael J.**, Clinical Assistant Professor  
AB, Yale University, 1951; MD, Western Reserve University, 1955.
- Book, Jonathan D.**, Clinical Assistant Professor  
BS, University of Maryland, 1971; MD, 1975.
- Bosma, Willem G. A.**, Associate Professor  
MD, University of Amsterdam, 1950.
- Bradford, Norman H.**, Assistant Professor (clinical psychology)  
BA, University of Minnesota, 1956; PhD, 1964.
- Brody, Eugene B.**, Professor  
AB, MA, University of Missouri, 1941; MD, Harvard Medical School, 1944.
- Brown, Clinton**, Research Associate  
BA, University of Cincinnati, 1948; PhD, 1953.
- Brown, Dortha**, Research Associate
- Brown, George P.**, Clinical Assistant Professor  
BS, Howard University, 1940; MD, 1944.
- Burka, Aden A.**, Clinical Instructor  
BA, Wesleyan University, 1970; PhD, University of Rochester, 1976.
- Burton, Howard**, Research Associate  
BA, State University of New York at Stony Brook, 1973; MA, 1974; PhD, Saint Louis University, 1978.
- Cann, Ronald E.**, Clinical Assistant Professor  
AB, Washington University, 1968; MD, University of Missouri, 1972.
- Carney, Francis L.**, Clinical Assistant Professor (psychology)  
AB, Clark University, 1954; MA, American University, 1962; PhD, Catholic University, 1967.
- Carpenter, William T., Jr.**, Professor  
BA, Wofford College, 1958; MD, Bowman-Gray School of Medicine, 1962.
- Carrill, John H.**, Instructor  
BA, Franklin and Marshall College, 1971; MD, University of Maryland, 1975.
- Carver, Patricia N.**, Clinical Instructor  
AB, Wellesley College, 1955; MA, Clark University, 1958; PhD, 1961.
- Cephas, Barbara**, Assistant Professor  
BA, Coppin State College, 1968; MSW, University of Maryland, 1970.
- Chabon, Robert**, Assistant Professor  
BA, George Washington University, 1959; MD, Georgetown University, 1963.
- Chaiklin, Harris**, Assistant Professor (psychiatric social work)  
BA, University of Connecticut, 1950; MSW, University of Wisconsin, 1953; PhD, Yale University, 1961.
- Chandra, Rakesh**, Clinical Assistant Professor  
MD, India Institute of Medical Sciences, New Delhi, 1973.
- Cheeks, Sherrill C.**, Clinical Instructor  
BA, Bridgewater College, 1956; MD, University of Maryland, 1960.
- Christopher, Russell Lee, Jr.**, Instructor  
BS, University of Southern California, 1966; MD, University of Maryland, 1972.
- Cimonetti, Thomas**, Clinical Assistant Professor  
BA, Saint Michaels, 1952; MD, University of Maryland, 1965.
- Clemmens, Raymond L.**, Associate Professor  
BS, Loyola College, 1947; MD, University of Maryland, 1951.
- Cohen, George**, Assistant Professor  
BS, University of Pittsburgh, 1956; MS 1963.
- Cohen, Irvin H.**, Clinical Assistant Professor  
BA, Johns Hopkins University, 1944; MD, University of Maryland, 1947.
- Cohen, Sidney**, Clinical Assistant Professor  
BA, Boston University, 1964; MD, 1969.
- Cole, Kathleen**, Clinical Assistant Professor  
BS, Catholic University, 1968; MS, Wayne State University, 1970.
- Coleman, Peter J.**, Clinical Assistant Professor  
BS, Seattle University, 1963; MD, University of Washington, 1967.
- Connor, Huell E., Jr.**, Instructor  
BS, Texas A&M University, 1958; MA, University of Texas, 1960; MD, 1964.
- Convey, William H.**, Instructor  
MD, University of Virginia, 1974.
- Coto, Pedro**, Clinical Instructor\*  
BS, University of Costa Rica, 1962; MD, 1967.

- Coughlin, Cecilia**, Research Associate  
LPN, Crownsville School of Nursing, 1939.
- Cowl, John G.**, Clinical Assistant Professor  
AB, Hamilton College, 1964; MD, University of Texas, 1968.
- Croce, Giovanni C.**, Instructor  
MD, University of Rome, 1946.
- Culp, Clifford**, Clinical Assistant Professor  
AB, Johns Hopkins University, 1957; MD, University of Maryland, 1963.
- Cumming, Robert C.**, Assistant Professor  
BA, University of Maryland, 1966; MD, 1971.
- Dashef, Stephen S.**, Clinical Assistant Professor  
BA, Brown University, 1963; MD, University of Rochester, 1968.
- David, Henry P.**, Clinical Associate Professor (psychology)  
BA, University of Cincinnati, 1948; MA, 1949; PhD, Columbia University, 1951.
- Davis, Nathan**, Clinical Assistant Professor  
BA, University of Chicago, 1950; MD, 1957.
- Decker, Curtis L.**, Clinical Instructor  
BA, Hamilton College, 1966; JD, Cornell Law School, 1969.
- Dixon, William T.**, Clinical Assistant Professor  
AB, Princeton University, 1940; MD, Johns Hopkins University, 1944.
- Dominquez, Emilio J.**, Clinical Assistant Professor  
MD, Madrid School of Medicine, 1961.
- Donner, Lawrence**, Associate Professor (clinical psychology)  
BA, Rutgers University, 1962; MS, 1965; PhD, 1967.
- Dubin, Samuel**, Assistant Professor  
BA, Washington Square College, 1950; MD, Faculty of Medicine, University of Leiden, the Netherlands, 1957.
- Duffy, Franklin**, Instructor  
BS, Davidson College, 1969; MD, Medical College of Georgia, 1973.
- Dvoskin, Philip**, Clinical Instructor  
BS, University of Maryland, 1962; MD, 1966.
- El-Beshir, Abdel M.**, Clinical Instructor  
MB, ChB, Kasr-El-Aing School of Medicine, 1954.
- Einberg, Elmar**, Research Associate  
EE, Netzlers Institute of Technology, Gothenburg, Sweden, 1950; BS, Johns Hopkins University, 1962.
- Evans, Margaret**, Research Associate  
BA, University of Maryland, 1976.
- Fiedler, Kurt R.**, Clinical Assistant Professor  
MD, University of Berlin, 1953.
- Finn, Rolfe B.**, Clinical Instructor  
MB, ChB, University of Otago, N.Z., 1950; DPM, Conjoint Examining Board of England, 1957.
- Fitch, Frances J.**, Assistant Professor  
BS, Morgan State College, 1973; MS, Loyola College, 1975.
- Fitzpatrick, William W.**, Assistant Professor  
BS, Mercer University, 1941; MD, Emory University, 1944.
- Flaherty, Lois**, Assistant Professor  
BA, Wellesley College, 1963; MD, Duke University, 1968.
- Flashman, Alberta**, Clinical Instructor  
BA, University of California, Los Angeles, 1955; MD, University of Southern California, 1960.
- Freedenburg, Daniel J., Jr.**, Assistant Professor  
MD, University of Maryland, 1969.
- Freinek, Wilfried R.**, Instructor  
MD, Innsbruck University, Austria, 1953.
- Friedman, Stanford**, Professor and Director, Division of Child & Adolescent Psychiatry  
BA, Antioch College, 1953; MD, University of Rochester, 1957.
- Frieman, Robert D.**, Clinical Assistant Professor  
AB, University of California, 1960; MD, 1965.
- Gallahorn, George E.**, Associate Professor  
BS, Georgetown University, 1962; MD, University of Maryland, 1966.
- Gantt, Horsley**, Professor  
BS, University of North Carolina, 1917; MD, University of Virginia, 1920.



- Genut, Kate L.**, Assistant Professor (psychiatric social work)  
BA, University of Maryland, 1968; MSW, 1970.
- Geser, Marcia A.**, Research Associate  
BA, University of Maryland, 1972; MS, Loyola College, 1976.
- Gibson, Robert W.**, Clinical Associate Professor  
MD, University of Pennsylvania, 1948.
- Glaser, Kurt R.**, Clinical Associate Professor  
MD, University of Lausanne, 1939; MSc (pediatrics), University of Illinois, 1948.
- Godenne, Ghislaine D.**, Clinical Associate Professor (child psychiatry)  
BS, University of Louvain, Belgium, 1948; MD, 1952.
- Gordon, Bernard S.**, Assistant Professor  
AB, University of Michigan, 1937; MD, University of Louisville, 1942.
- Goshen, Charles**, Assistant Professor  
BA, Columbia College, 1964; MD, West Virginia University, 1968.
- Gould, Norman S.**, Associate Professor  
AB, Pomona College, 1948; MS, University of Southern California, 1949; PhD, Florida State University, 1961.
- Graham, David B.**, Assistant Professor  
MD, University of Rochester, 1970.
- Gray, Sheila Hafter**, Clinical Associate Professor  
BA, Brooklyn College, 1950; MA, New School of Social Research, 1954; MD, Harvard Medical School, 1958.
- Grenell, Robert G.**, Professor (neurobiology)  
BS, College of the City of New York, 1935; MS, New York University, 1936; PhD, University of Minnesota, 1943.
- Gross, Herbert S.**, Associate Professor  
BA, Yeshiva College, 1956; MD, Albert Einstein College of Medicine, 1960.
- Haley, Cloe M.**, Assistant Professor (psychology)  
Licenciada in Psychology, University of Buenos Aires, 1965.
- Haley, Jay D.**, Clinical Professor  
BA, University of California, Los Angeles, 1948; BLS, University of California, 1951; MA, Stanford University, 1953.
- Hamilton, John**, Instructor  
BA, Pacific Union College, 1943; MD, Howard University, 1951.
- Hanlon, Thomas**, Research Associate  
BA, Catholic University, 1951; MA, 1953; PhD, 1958.
- Haran, Judith F.**, Assistant Professor (psychiatric social work)  
BA, University of Maryland, 1969; MSW, 1973.
- Harbin, Henry T.**, Assistant Professor  
BA, University of Virginia, 1968; MD, Medical College of Georgia, 1972.
- Harris, Roger**, Clinical Assistant Professor  
AB, University of Maryland, 1961; MD, 1968.
- Harris, William M.**, Associate  
AB, University of West Virginia, 1941; MD, University of Maryland, 1953.
- Heinrich, Douglas**, Instructor  
BS, Georgetown University, 1972; MD, 1976.
- Herron, John David**, Research Associate  
AA, Holy Family Seminary, 1968; MSW University of Maryland, 1975.
- Herts, John B.**, Assistant Professor  
BA, Rutgers University, 1961; MD, Georgetown University, 1966.
- Hiller, Gail**, Instructor  
BSN, University of Maryland, 1967.
- Holden, William**, Clinical Associate Professor  
BS, Marquette University, 1948; MD, 1952.
- Holder, William L.**, Clinical Assistant Professor  
AB, Emory University, 1949; MD, University of Maryland, 1953.
- Horrom, Nancy**, Research Associate  
AB, College of William and Mary, 1972.
- Huffer, Virginia**, Professor  
BS, University of Maryland, 1940; MD, 1950.
- Hulfish, Barbara**, Clinical Assistant Professor (neurology)  
BA, American University, 1944; MD, University of Rochester, 1952.

- Hunt, Gerard**, Associate Professor (sociology)  
BS, Fordham University, 1959; MA, Emory University, 1962; PhD, University of North Carolina, 1969.
- Hunt, Lorraine L.**, Clinical Assistant Professor of Humanities\*  
BA, Amherst College, 1954; MA, University of North Carolina, 1958; PhD, 1965.
- Imboden, John B.**, Clinical Associate Professor  
University of Notre Dame, 1946; MD, Johns Hopkins University, 1950.
- Jencks, Stephen F.**, Clinical Assistant Professor  
AB, Harvard University, 1962; MD, 1967.
- Jensen, Philip**, Assistant Professor  
BA, University of Virginia, 1947; MD, Johns Hopkins University, 1952.
- Johnson, Frank P.**, Clinical Instructor  
BS in Ed., Ballstate University, 1957; MDiv., Andover Newton Theological School, 1961.
- Johnston, Daniel F.**, Clinical Assistant Professor  
AB, Princeton University, 1952; MD, University of Maryland, 1956.
- Jolbitado, Deusdedita**, Clinical Assistant Professor  
AA, University of Santo Tomas, 1951; MD, 1956.
- Jonas, Alan**, Clinical Assistant Professor  
AB, Johns Hopkins University, 1967; MD, New York University, 1971.
- Jones, Norma**, Assistant Professor (psychiatric social work)  
AB, Morgan State College, 1957; MSW, Howard University, 1965.
- Kaiser, Theodore**, Clinical Assistant Professor  
BS, Johns Hopkins University, 1945; MD, 1949.
- Karahasanoglu, Alp**, Assistant Professor  
MD, Hacettepe University, Ankara, Turkey, 1968; PhD, Biochem, 1970.
- Keller, Kenneth**, Research Associate  
BA, Northeastern, 1971; MA, New York University, 1973; PhD, 1976.
- Kelly, Ralph Gerard**, Instructor  
BA, Saint Mary's Seminary, 1965; MTh, Saint Mary's Institute of Theology; BA, University of Maryland, 1973.
- Kemp, Katherine**, Assistant Professor  
AB, College of Notre Dame of Maryland, 1943; MD, University of Maryland, 1948.
- Kenny, Thomas J.**, Assistant Professor  
AB, Washington and Lee University, 1954; MA, George Peabody College for Teachers, 1959; PhD, Catholic University of America, 1969.
- Klein, Gary A.**, Clinical Assistant Professor  
BS, Loyola College, 1966; MS, University of Maryland, 1970.
- Kniffin, Lynn**, Clinical Assistant Professor  
AB, University of Akron, 1952; MSW, University of Maryland, 1968.
- Knowles, Frederick**, Assistant Professor  
BA, Harvard University, 1964; MD, University of Maryland, 1968.
- Kohlmeyer, Werner A.**, Clinical Associate Professor  
MD, University of Göttingen, Germany, 1942.
- Kohn-Rabin, Nancy**, Assistant Professor  
BA, Oberlin College, 1965; PhD, University of Chicago, 1971.
- Krajewski, Thomas F.**, Clinical Assistant Professor  
BS, Loyola College, 1970; MD, University of Maryland, 1975.
- Kurland, Albert**, Research Associate  
BS, University of Maryland, 1936; MD, 1940.
- Kutzer, Dennis J.**, Clinical Instructor  
BS, University of Maryland, 1971; MD, 1975.
- Lasson, Morris L.**, Assistant Professor (psychology)  
BA, New Israel College, 1960; MA, Loyola College, 1962; PhD, Catholic University, 1966.
- Laucks, Stanley P.**, Assistant Professor (psychology)  
BS, Ursinus College, 1943; MD, University of Pennsylvania, 1946.
- Leichtman, Sandra R.**, Assistant Professor (clinical psychology)  
BA, University of Michigan, 1966; PhD, University of North Carolina, 1971.
- Levin, Leon A.**, Clinical Instructor  
BS, University of Wisconsin, 1952; MD, 1956.
- Levy, Stephen**, Instructor (psychology)  
BA, Johns Hopkins University, 1966; MA (equivalency), 1967.
- Lewis, Gail L.**, Instructor  
BSN, University of Delaware, 1971; MSN, University of Maryland, 1976.

- Lewis, Harvey A.**, Clinical Assistant Professor  
BA, Manhattan College, 1952; MD, Georgetown University, 1956.
- Lion, John R.**, Professor  
AB, Harvard University, 1960; MD, Albany Medical College of Union University, 1965.
- Lisansky, Ephraim T.**, Professor  
AB, Johns Hopkins Hospital, 1933; MD, University of Maryland, 1937.
- Lisansky, Sylvia**, Clinical Instructor  
AB, Goucher College, 1936; MSW, University of Maryland, 1970.
- Lloyd, Dee**, Assistant Professor (psychology)  
BA, University of Utah, 1956; MA, 1958; PhD, Ohio State University, 1961.
- Logue, Andrew D.**, Clinical Instructor  
BS, Yale University, 1960; MD, Johns Hopkins University
- Long, S. Eugene**, Clinical Assistant Professor  
BS, Wagner College, 1955; MD, George Washington University, 1959.
- Lopez, Rafael**, Clinical Assistant Professor  
BA, University of Santa Domingo, 1963; MD, 1969.
- Love, Lois**, Clinical Instructor  
BA, Swarthmore College, 1943; PhD, University of Pennsylvania, 1947; MD, University of Maryland, 1959.
- Lopez, Rafael**, Clinical Assistant Professor  
BA, University of Santa Domingo, 1963; MD, 1969.
- Love, Lois**, Clinical Instructor  
BA, Swarthmore College, 1943; PhD, University of Pennsylvania, 1947; MD, University of Maryland, 1962.
- Lucco, Alfred A.**, Assistant Professor  
BA, Brown University, 1959; MA, University of Chicago, 1963; PhD, 1965.
- Lynch, James J.**, Professor (psychology)  
BS, Boston College, 1962; MA, Catholic University, 1964; PhD, 1965.
- Lynch, Thomas**, Clinical Assistant Professor  
MB, BCh, University College of Dublin, Ireland, 1947; DPM, National University of Ireland, 1950.
- MacKay, Bryan**, Research Associate  
BA, University of Maryland, 1973.
- Madden, Denis J.**, Assistant Professor  
BA, Saint Benedict's College, 1963; Ordination, Saint Mary's School of Theology, 1967; MEd, Teacher's College, Columbia University, 1969; PhD, Notre Dame University, 1973.
- Magruder, William W.**, Clinical Assistant Professor  
BS, Mississippi State College, 1942; MD, Duke University, 1944.
- Manzanera, Elena I.**, Assistant Professor  
MS, Columbia University, 1967.
- Maters, Patricia**, Instructor (psychiatric nursing)  
SRN, Saint Bartholomew's Hospital, London, 1952.
- Maxwell, Anabel**, Assistant Professor  
AB, University of Maryland, 1933; MSW, University of Pennsylvania, 1938.
- May, Gerald G.**, Assistant Professor  
BA, Ohio Wesleyan University, 1962; MD, Wayne State University School of Medicine, 1965.
- Maziar, Howard M.**, Instructor  
BS, Tulane University, 1968; MD, Medical College of Georgia, 1972.
- McAffee, Laurice L.**, Clinical Assistant Professor  
AB, Stanford University, 1961; MD, Cornell University Medical College, 1965.
- McClelland, Paul**, Clinical Instructor  
BA, Physics Syracuse University, 1970; MD, University of Maryland, 1977.
- McCullough, Duncan**, Associate  
AB, Princeton University, 1950.
- McDaniel, Ellen**, Associate Professor\*  
MD, University of Michigan, 1966.
- McDonald, Matthew**, Clinical Assistant Professor (psychology)  
BA, University of Maryland, 1966; MA, 1969; PhD, 1971.
- McElroy, Evelyn**, Clinical Assistant Professor (psychiatric nursing)  
BSN, University of Colorado, 1961; MS, University of Maryland, 1966; PhD, 1973.
- McLaney, Martha**, Assistant Professor (psychiatric social work)  
BA, Towson State College, 1967; MSW, University of Maryland, 1968.
- Merlis, Daniel T.**, Clinical Instructor  
BA, Hobart College, 1972; MSW University of Maryland, 1975.



- Modarressi, Taghi M.**, Associate Professor  
MD, University of Tehran, 1959.
- Monroe, Russell R.**, Chairman and Professor  
BS, Yale University, 1942; MD, 1944.
- Mott, Thurman, Jr.**, Associate Professor  
BS, Northwestern University, 1950; MD, 1952.
- Newman, Ruth G.**, Clinical Associate Professor (psychology)  
BA, Rutgers University, 1937; MA George Washington University, 1952; PhD, University of Maryland, 1958.
- Noh, Kyung J.**, Assistant Professor  
MD, College of Medicine, Yonsei University, Seoul, Korea, 1965.
- Nolan, Jay H.**, Assistant Professor  
BA, Sacramento State College, 1961; MA, Stanford University, 1962; PhD, 1972.
- Nosphitz, Joseph D.**, Assistant Professor  
BA, University of Louisville, 1943; MD, 1945.
- Nurco, David**, Research Associate  
BA, George Washington University, 1951; MA, University of Connecticut, 1954; DSW, National Catholic School of Social Study, 1969.
- Nyman, Gary**, Assistant Professor  
AB, Columbia College, 1963; MD, University of Virginia, 1968.
- O'Donnell, James J.**, Instructor (alcoholism counseling project)
- Okum, Majorie**, Clinical Instructor  
BA, University of Maryland, 1970; PhD, Catholic University, 1975.
- Oleynick, Harry A.**, Assistant Professor  
BA, University of Pennsylvania, 1952; MD, University of Chicago School of Medicine, 1956.
- Olsen, Roger L.**, Clinical Assistant Professor  
BA, Saint Olaf College, 1962; MA, University of South Dakota, 1963; PhD, Southern Illinois University, 1968.
- Olsson, James E.**, Clinical Assistant Professor  
BS, University of Maryland, 1959; MA, Catholic University of America, 1962; PhD, 1967.
- Oppenheimer, Ruth**, Assistant Professor (child therapy)  
BA, University of London, 1953.
- Ota, Kay**, Assistant Professor  
BA, Guilford College, 1953; MS, College of William and Mary, 1956; PhD, Catholic University, 1965.
- Ozer, Mark M.**, Assistant Professor  
AB, Harvard University, 1953; MD, Boston University School of Medicine, 1957.
- Pande, Shashi Kumar**, Clinical Associate Professor  
MBBS, GS Medical College, Bombay University, 1952.
- Paskewitz, David A.**, Assistant Professor  
BA, University of Minnesota, 1963; MS, University of Oklahoma, 1965; PhD, 1967.
- Patel, Bhupendrakamer M.**, Clinical Assistant Professor  
MD, Medical College, Baroda, India, 1963.
- Penna, Manoel**, Clinical Associate Professor\*  
BA, Paes de Carvalho College, 1955; MD, University of Para Brazil, 1961.
- Phillips, Jay**, Assistant Professor  
BS, Tufts University, 1969; MD, University of Maryland, 1974.
- Platman, Stanley R.**, Clinical Professor  
MD, Queens University, Belfast, 1963.
- Plaut, S. Michael**, Associate Professor (psychology)  
BA, Adelphi University, 1965; PhD, University of Rochester, 1968.
- Powell, Albert M., Jr.**, Clinical Assistant Professor  
MD, University of Maryland, 1948.
- Press, Leonard**, Clinical Assistant Professor  
BA, Johns Hopkins University, 1952; MSSA, Western Reserve University, 1957.
- Pulver, Anne**, Research Associate  
BA, Boston University, 1970; MHS, Johns Hopkins University, 1974.
- Rappeport, Jonas R.**, Clinical Associate Professor  
BS, University of Maryland, 1948; MD, 1952.
- Rasinsky, Marc G.**, Clinical Instructor  
BA, University of Maryland, 1970; JD, 1974.
- Redmond, Anne**, Assistant Professor  
BA, Johns Hopkins University, 1969; MD, 1972.

- Reed, Julian**, Clinical Assistant Professor  
BS, University of Maryland, 1948; MD, 1952.
- Regan, Bruce**, Assistant Professor  
BA, Harvard University, 1970; MD, University of Maryland, 1974.
- Ressin, Ellen**, Research Associate  
BA, University of Maryland, 1969; MA, Columbia University, 1971.
- Rey, Alix**, Assistant Professor  
Arts and Sciences, Saint Louis De Gonzague; MD, Universidad Nacional Autonoma De Mexico, 1968.
- Roberts, Randy**, Instructor (clinical psychology)  
BA, University of Pennsylvania, 1967; MA, University of Maryland, 1970; PhD, 1971.
- Robinson, Kent**, Assistant Professor  
BA, University of Cincinnati, 1943; MD, 1947.
- Robinson, Lisa**, Assistant Professor  
BSN Ed, American University, 1961; MS, University of Maryland, 1965; RN, 1969, PhD, Union Memorial Hospital, 1970.
- Rodbell, Stanley L.**, Assistant Professor  
BS, University of Pennsylvania, 1955; JD, Yale University, 1958; MLA, Johns Hopkins University, 1971; MSW, University of Maryland, 1975.
- Romero, Eduardo**, Assistant Professor  
MD, Universidad Nacional, Cordoba, Argentina, 1962.
- Roseman, Morris**, Associate Professor (clinical psychology)  
BS, University of Maryland, 1942; BA, 1943; PhD, Duke University, 1949.
- Rosenberg, Anna**, Clinical Assistant Professor  
BA, Drew University, 1956; MS, Purdue University, 1957; PhD, 1961.
- Rudnick, Barry F.**, Assistant Professor  
BS, Union College, 1968; MD, Albany Medical College, 1972.
- Sakles, Constantine J.**, Associate Professor  
AB, University of Rochester, 1955; MD, Yale University, 1959.
- Sarles, Richard M.**, Associate Professor  
BS, Georgetown University, 1957; MD, University of Maryland, 1961.
- Saunders, Stephen W.**, Instructor  
BA, Emory University, 1967; MD, 1973.
- Savage, Charles**, Clinical Professor  
BA, Yale University, 1939; MS, University of Chicago, 1943; MD, 1945.
- Schnaper, Nathan**, Clinical Professor  
BS, Washington College, 1940; MD, University of Maryland, 1949.
- Schonfield, Jacob**, Clinical Assistant Professor  
BA, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.
- Schreder, Richard H.**, Assistant Professor (psychiatric social work)  
BA, University of Notre Dame, 1966; MSW, University of Maryland, 1972.
- Schulz, Clarence G.**, Clinical Instructor  
MD, Washington University, 1945.
- Schuster, Frances**, Research Associate  
BA, University of Baltimore, 1972.
- Schwartz, Lloyd**, Clinical Assistant Professor (clinical psychology)  
BA, Pennsylvania State University, 1947; MS, 1946; PhD, American University
- Schwartz, Robert**, Research Assistant Professor  
BS, University of Vienna, 1968; PhD, 1974.
- Schweig, Noel**, Clinical Assistant Professor  
BA, Wesleyan University, 1951; MD, Duke University, 1956.
- Scratton, Joan M.**, Associate Professor (psychiatric social work)  
BA, University of Melbourne, 1963; MSW, Smith College of Social Work, 1965.
- Seman, Patti**, Instructor  
BA, Loyola College, 1972; MSW, University of Maryland, 1974.
- Shapiro, Solomon**, Clinical Assistant Professor (clinical psychology)  
BS, Towson State College, 1942; MA, Johns Hopkins University, 1948; PhD, University of Maryland, 1952.
- Shear, Howard J.**, Assistant Professor (psychology)  
BA, University of Maryland, 1950; MA, University of Texas, 1953; PhD, 1955.
- Sherlock, Michael**, Clinical Assistant Professor  
BA, Stanford University, 1965; MD, University of Chicago, 1970.

- Shochet, Bernard**, Clinical Associate Professor  
BS, University of Maryland, 1952; MD, 1954.
- Sidhu, Ajaib D.**, Associate  
BS, Punjab University, India, 1943; MBBS, 1950; MD, University of Delhi, 1962.
- Siegmán, Aron W.**, Research Professor (psychology)  
BA, City College of New York, 1952; University of Wisconsin, 1954; PhD, Columbia University, 1957.
- Sila, Basra**, Assistant Professor  
BS, College of Saint Michael, Istanbul, Turkey, 1950; MD, University of Istanbul, 1956.
- Silver, Stuart B.**, Clinical Assistant Professor  
BA, Johns Hopkins University, 1963; MD, 1966.
- Smith, Boylston**, Clinical Instructor  
AB, West Virginia University, 1946; MD, University of Maryland, 1952.
- Smith, James, II**, Clinical Instructor  
AB, Union College, 1944; MD, University of Pennsylvania, 1951.
- Starr, Stephen D.**, Instructor  
BA, University of Massachusetts, 1964; MS, Springfield College, 1966; CAS, 1966.
- Steinbach, Irvin L.**, Clinical Instructor (clinical psychology)  
BS, University of Maryland, 1953; MA, George Washington University, 1966.
- Stephens, Joseph**, Professor  
AB, Johns Hopkins University, 1948; MD, 1952.
- Stimely, Patricia**, Research Associate  
Lutheran School of Nursing, 1961.
- Stolk, Madelyn**, Research Associate  
BA, Bates College, 1969.
- Styrt, Jerome**, Clinical Associate Professor  
BS, University of Chicago, 1940; MD, 1945.
- Strauss, Milton E.**, Research Associate Professor  
BS, City College of New York, 1962; AM, Harvard University, 1965; PhD, 1967.
- Summerfelt, Ann**, Research Associate  
BA, University of Illinois, 1975.
- Taylor, Ronald J.**, Clinical Assistant Professor  
AB, Washington and Jefferson College, 1966; MS, Yeshiva University, 1968; MD, University of Maryland, 1973.
- Terry, Jane**, Clinical Instructor  
BA, College of William and Mary, 1967; MD, University of Kansas, 1971.
- Thornton, Doris S.**, Assistant Professor  
BA, Meredith College, 1957; MD, University of Maryland, 1974.
- Tiegel, Stuart**, Instructor BS, George Washington University, 1969; MSW, University of Maryland, 1975.
- Tormey, Judith**, Assistant Professor  
BA, Barnard College, 1961; PhD, Columbia University, 1970.
- Trattner, Robert E.**, Instructor  
DDS, Western Reserve University, 1945; AB, 1947; MD, University of Chicago, 1951.
- Tuerk, Isadore**, Associate Professor  
BS, Johns Hopkins University, 1930; MD, University of Maryland, 1934.
- Tueting, Patricia**, Assistant Professor  
BA, Saint Olaf College, 1963; MA, Columbia University, 1964; PhD, 1968.
- Turek, Ibrahim**, Clinical Assistant Professor  
MD, University of Istanbul, 1954.
- Ulgar, Ulku**, Clinical Assistant Professor  
MD, University of Istanbul, 1959.
- Upright, Dennis**, Research Associate  
BS, EE, Pennsylvania State University, 1960.
- Vauls, Kersley**, Instructor  
BS, Morgan State College, 1958; MS, 1967.
- Von Muehlen, Lutz**, Assistant Professor  
BS, University of Frankfurt, 1954; MD, University of Munich, 1958.
- Wagman, Althea**, Research Associate  
BS, College of William and Mary, 1954; MA, Columbia University, 1959; PhD, South Illinois University, 1966.
- Wain, Harold J.**, Clinical Assistant Professor  
BS, Brooklyn College, 1964; MA, Columbia University, 1966; PhD, Nebraska University, 1970.



- Wallis, Kathryn D.**, Assistant Professor  
BS, University of Southwestern Louisiana, 1967; MS, University of Maryland, 1976.
- Walls, Philip**, Clinical Assistant Professor  
AB, Bowdoin College, 1964; MD, Tufts University, 1968.
- Warwick, Arthur M.**, Clinical Instructor  
BA, Western Reserve University, 1966; MD, University of Maryland, 1970.
- Waterbury, Marcia**, Clinical Assistant Professor  
BA, Texas Technological University, 1966; MD, University of Texas, 1970.
- Weinstein, Gerald E.**, Clinical Assistant Professor  
BA, Syracuse University, 1949; MD, 1954.
- Weinstein, Stanley**, Assistant Professor (psychiatric social work)  
BA, University of Maryland, 1965; MSW, 1968.
- Weinstock, Joseph S.**, Clinical Instructor  
BA, University of Maryland, 1956; MD, 1965.
- Weintraub, Walter**, Professor  
BA, New York University, 1948; MD, University of Geneva, 1951.
- Weir, W. Douglas**, Associate Professor  
AB, Saint Johns College, 1958; MD, University of Maryland, 1964.
- Weisman, Maxwell N.**, Clinical Assistant Professor  
BA, City College of New York, 1930; MA, Columbia University, 1931; MD, University of Amsterdam, 1958.
- Whitfield, Charles L.**, Assistant Professor  
BA, University of North Carolina, 1960; MD, 1965.
- Wilkinson, Edwina**, Research Associate
- Wimmer, William C.**, Clinical Assistant Professor  
BA, Western Maryland College, 1961; MD, University of Maryland, 1965.
- Wise, Samuel P., III**, Clinical Instructor  
MA, Emory University, 1941; MD, Tulane University, 1946.
- Woodruff, Douglas B.**, Clinical Instructor  
AB, Dartmouth College, 1969; MD, University of Maryland, 1973.
- Woolsey, Susan F.**, Assistant Professor  
BSN, Washington University, 1948; MS, University of Maryland, 1968; PNP, 1976.
- Wurmser, Leon**, Professor  
MD, University of Zurich, 1955.
- Wylie, John V.**, Clinical Instructor  
BA, Yale University, 1964; MD, Columbia College, 1969.
- Zebal, Bradley**, Instructor  
BA, Stanford University, 1967; MSW, University of Maryland, 1974.

## **RADIATION THERAPY**

- Cheung, Augustine Yin-Pan**, Assistant Professor  
BS, University of Maryland, 1969; MS, 1971; PhD, 1973.
- Harrison, George**, Associate Professor  
BA, Tufts University, 1965; MS, University of Maryland, 1969; PhD, 1972.
- Kim, Ill-Soo**, Assistant Professor  
Premedical Course, College of Science and Engineering, Yonsel University, Seoul, Korea, 1963; MD, 1967.
- Kubiczek, Elizabeth**, Research Associate  
MSc, University of Warsaw, 1967; MSc, University of Maryland, 1973.
- McCullough, Duncan**, Research Associate  
AB, Princeton University, 1950; BSEE, Johns Hopkins University, 1973.
- Patanaphan, Vinita**, Instructor  
MD, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand, 1971.
- Prempee, Thongbliew**, Professor\*  
MD, Siriraj Medical School, Thailand, 1958; PhD, Johns Hopkins University, 1968.
- Robinson, James E.**, Professor  
BS, Utah State Agricultural College, 1947; MA, Washington University, 1949; PhD, 1955.
- Samaras, George M.**, Assistant Professor  
BSEE, University of Maryland, 1972; MS, 1974; PhD, 1976.
- Scott, Ralph M.**, Professor and Chairman  
BS, University of Virginia, 1947; MD, Medical College of Virginia, 1950.

- Sewchand, Wilfred**, Assistant Professor  
BSc, University of London, England, 1964; MA, Cambridge University, England, 1970; MPhil, University of Leeds, England, 1970; ScD, Johns Hopkins University, 1974.
- Slawson, Robert G.**, Associate Professor  
BS, Morningside College, 1958; MD, State University of Iowa College of Medicine, 1962.
- Taylor, Stuart L.**, Professor  
AB, Harvard College, 1951; MS, New Mexico State University, 1956; PhD, 1960.
- Viravathana, Thavinsakdi**, Assistant Professor  
BS, Chulalongkorn University, Bangkok, 1960; MD, Siriraj Hospital, Mahidol University, Bangkok, 1964.

## REHABILITATION MEDICINE

- Balsam, Frederick J.**, Clinical Assistant Professor  
BS, College of the City of New York, 1931; MD, University of Lausanne, Switzerland, 1938.
- Basili, Annamaria G.**, Clinical Assistant Professor (Speech Pathology)  
BA, Saint Joseph's College, 1965; MA, Columbia University, 1967; PhD, Purdue University, 1971.
- Cohen, B. Stanley**, Clinical Professor  
MD, University of Maryland, 1947.
- Dankmeyer, Charles, Jr.**, Instructor BS, New York University, 1967.
- Danoff, Jerome V.**, Research Assistant Professor  
BES, Johns Hopkins University, 1968; MS, Pennsylvania State University, 1972; PhD, University of Maryland, 1977.
- Estruch, Sonia**, Clinical Assistant Professor  
MD, University of Santo Domingo, 1954.
- Feliciano, Christine B.**, Assistant Professor  
BS, University of Philippines, 1961; MD, 1964.
- Felsenthal, Gerald**, Assistant Professor  
BA, New York University, 1963; MD, Albany Medical College, 1967.
- Gessner, John E.**, Clinical Professor\*  
BS, Loyola College, 1950; MD, University of Maryland, 1954.
- Goldfine, Lewis J.**, Associate Professor  
MBBS (MD), Kings College and Hospital, University of London, 1960; DPhys Med, 1967.
- Grant, Albert**, Instructor  
BS, University of Maryland, 1940; MD, 1943.
- Hendry, Marjorie**, Instructor  
BS, University of Minnesota, 1941; MD, Medical College of Pennsylvania, 1953.
- Huang, Tai-San**, Clinical Assistant Professor  
MD, Kaohsiung Medical College, Taiwan, 1961; MS, Graduate School of Washington, 1972.
- Lentz, George A., Jr.**, Associate Professor  
AB, Johns Hopkins University, 1953; MD, University of Maryland, 1957.
- Raab, Kurt**, Associate Professor  
MD, Medical School of the University of Vienna, 1955.
- Reinstein, Leon**, Associate Professor\*  
BS, University of Maryland, 1964; MD, 1969.
- Reischer, Mark A.**, Adjunct Assistant Professor\*  
MD, Wayne State University, 1973.
- Richardson, Paul F.**, Professor and Chairman  
MD, University of Maryland, 1950.
- Rosen, Norman B.**, Assistant Professor  
BA, Johns Hopkins University, 1959; MD, University of Maryland, 1963.
- Schonfield, Jacob**, Associate Professor (psychology)  
BS, Yeshiva University, 1950; MA, University of Minnesota, 1951; PhD, University of Chicago, 1960.
- Shannon, Dorothy**, Instructor (speech pathology)  
BA, Montclair State College, 1965; MS, Pennsylvania State University, 1966; PhD, University of Maryland, 1973.
- Spindler, Henry**, Assistant Professor  
AB, Lehigh University, 1964; MD, New York University, 1968.
- Urusky, Walter**, Assistant Professor  
AB, New York University, 1938; MD, Marquette University, 1942.
- Weiss, Thomas**, Instructor (psychology)  
BA, Rutgers University, 1966; MS, North Carolina State, 1969; PhD, 1971.

## SURGERY

- Abrams, Robert C.**, Associate Professor, Orthopaedics  
AB, Johns Hopkins University, 1935; MD, 1939.
- Appleton, James R.**, Associate  
BA, University of Iowa, 1957; MD, University of Maryland, 1961.
- Armiger, William G.**, Associate  
BS, Loyola College, 1968; MD, University of Maryland, 1972.
- Arnold, James G.**, Professor Emeritus, Neurosurgery  
BA, University of North Carolina, 1925; MD, Johns Hopkins University, 1929.
- Attar, Safuh**, Professor  
BA, American University of Beirut, Lebanon, 1947; MD, 1951.
- Badder, Elliott M.**, Assistant Professor  
BA, University of Pennsylvania, 1963; MD, Thomas Jefferson Medical College, 1957.
- Baker, Dole P.**, Assistant Professor  
BA, Harvard University, 1961; MD, Jefferson Medical College, 1965.
- Ballesteros, Ruben F.**, Associate  
MD, University of the Philippines, 1964.
- Bashirelahi, Nasir**, Assistant Professor, Urology  
BS, Tehran University, 1960; PharmD, 1962.
- Becker, Larry**, Assistant Professor  
BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.
- Berger, Bruce W.**, Assistant Professor, Urology  
MD, BA, Cornell University, 1964; MD, Upstate Medical Center, Syracuse, 1968.
- Bergmann, Frederick G.**, Instructor, Urology  
AB, Cornell University, 1963; MD, Temple University, 1967.
- Bialostozky, Franklin M.**, Instructor  
BS, Brooklyn College, 1972; MA, Northwestern University, 1976.
- Blanchard, Cyrus L.**, Professor  
BA, Clark University, 1943; MD, George Washington University, 1946.
- Blum, Stanley L.**, Instructor  
BA, Lafayette College, 1961; MD, University of Maryland, 1965.
- Blumberg, Lawrence**, Instructor  
BA, Western Maryland College, 1967; MD, University of Maryland, 1971.
- Blumenfeld, Walter**, Associate  
BS, Antioch College, 1967.
- Bowie, Harry C.**, Assistant Professor  
BS, University of Maryland, 1933; MD, 1936.
- Breschi, Louis C.**, Assistant Professor  
BS, Loyola College, 1958; MD, University of Maryland, 1962.
- Brouillet, George H., Jr.**, Instructor, Orthopaedics  
BS, University of Maryland, 1967; MD, 1971.
- Busky, Stephen M.**, Instructor, Urology  
AB, Hamilton College, 1964; MD, New York University, 1968.
- Campbell, Edward W., Jr.**, Associate Professor  
AB, Amherst College, 1954; MD, Hahnemann Medical College, 1958.
- Chambers, Robert G.**, Clinical Assistant Professor  
BS, Duke University, 1944; MD, 1945.
- Cherry, Jerrie**, Assistant Professor, Otolaryngology  
BA, University of Virginia, 1951; MD, Johns Hopkins University, 1955.
- Cicci, Regina L.**, Assistant Professor  
BS, Kent State University, 1960; MA, Northwestern University, 1961.
- Clark, Francis A., Jr.**, Assistant Professor  
MD, University of Maryland, 1961.
- Clayton, Marco**, Instructor  
BS, Union College, 1954; MD, PhD (hematology), Johannes Gutenberg, Germany, 1964.
- Cohen, Edward R.**, Instructor  
BS, University of Maryland, 1963; MD, 1967.
- Cole, Fred N.**, Instructor  
BA, University of Virginia, 1952; MD, 1956.
- Cook, David M.**, Instructor  
BS, Ohio University, 1962; MD, University of Maryland, 1966.
- Courtney, Leo A., III**, Instructor  
BS, University of Maryland, 1966; MD, 1970.



- Cowley, R. Adams**, Professor  
MD, University of Maryland, 1944.
- Cranley, Robert E.**, Associate Professor  
BS, University of Maryland, 1956; MD, 1958.
- Crosby, Robert M. N.**, Professor, Pediatric Neurosurgery  
MD, University of Maryland, 1943.
- Cunningham, Raymond M.**, Instructor  
BA, Loyola College, 1935; MD, University of Maryland, 1939.
- Dagher, Fuad J.**, Professor  
BA, American University of Beirut, Lebanon, 1954; MD, 1958.
- Decker, J. Scott**, Assistant Professor  
BS, University of Illinois, 1957; MD, 1961.
- Dellon, Arnold Lee**, Clinical Instructor  
BA, Johns Hopkins University, 1966; MD, 1970.
- Demarco, Salvatore J.**, Instructor  
AB, Loyola College, 1955; MD, University of Maryland, 1959.
- Diamond, Liebe S.**, Associate Professor  
AB, Smith College, 1951; MD, University of Pennsylvania, 1955.
- Didolkar, Mukund S.**, Assistant Professor  
MBBS, Nagpur University, India, 1965; MS (Surg.) 1968.
- Dorfman, Howard D.**, Associate Professor  
BA, New York University, 1947; MD, State University of New York, Downstate, 1951.
- Doyle, Robert L.**, Assistant Professor  
BS, Loyola College, 1959; MD, University of Maryland, 1964.
- Ducker, Thomas B.**, Professor  
BA, University of Virginia, 1959; MD, 1963.
- Dwyer, Frank P., Jr.**, Assistant Professor, Otolaryngology  
MD, University of Maryland, 1948.
- Edwards, Charles C.**, Associate Professor  
BA, Duke University, 1964; MD, University of Maryland, 1968.
- Eisenstat, Theodore E.**, Assistant Professor  
BA, Vanderbilt University, 1964; MD, New York Medical College, 1968.
- Elias, E. George**, Professor  
MD, University of Cairo, 1957; MS, State University of New York, 1974; PhD, University of Buffalo, 1975.
- Ellis, Michael**, Instructor  
BS, Loyola College, 1961; MD, University of Maryland, 1966.
- Engnoth, Milton L.**, Instructor, Otolaryngology  
BS, University of Maryland, 1953; MD, 1957.
- Fallon, Graham**, Assistant Professor  
BA, Holy Cross College, 1962; MD, Creighton University, 1966.
- Ferris, Philip J.**, Assistant Professor  
BA, Johns Hopkins University, 1954; MD, 1958.
- Fletcher, Margaret M.**, Clinical Associate Professor  
MD, University of Michigan, 1961.
- Florin, Suzanne**, Instructor  
MA, University of Tennessee, 1976; BS, University of Maryland, 1974.
- Fox, Madeline**, Instructor  
BA, Queens College, 1966; MS, University of Michigan, 1967.
- Fraiji, Elie K.**, Associate  
BS, University of Science, Montpeliers, France; MD, University of Paris.
- Fraiman, Moises**, Associate  
MD, University of San Marcos, 1954.
- Friedler, Stanley**, Instructor  
BS, University of Maryland, 1961; MD, 1965.
- Fuller, Stephen**, Instructor  
MB, BCH, BAO, University College, Dublin, Ireland, 1968.
- Gadacz, Thomas R.**, Assistant Professor  
BS, University of Notre Dame, 1962; MD, St. Louis University School of Medicine, 1966.
- Galleher, Earl P.**, Associate Professor  
AB, Princeton University, 1949; MD, Johns Hopkins University, 1953.
- Gelber, Rene L.**, Assistant Professor  
BA, Pomona College, 1959; MD, University of California, 1963.

**Gillis, David J.**, Instructor, Urology  
BS, Loyola College, 1960; MD, University of Maryland, 1965.

**Goldstein, Robert B.**, Instructor  
MD, University of Maryland, 1954.

**Gordon, Roger L.**, Associate  
BA, Boston University, 1968; MD, University of Maryland, 1972.

**Gray, William C.**, Assistant Professor  
BS, University of Maryland, 1969; MD, George Washington University, 1973.

**Green, David Charles**, Professor  
BS, Saint Lawrence University, 1954; MD, State University of New York College of Medicine, 1954.

**Greenstein, George H.**, Assistant Professor  
BA, Johns Hopkins University, 1941; MD, 1950.

**Gudwin, Arthur L.**, Assistant Professor  
BS, Tufts University, 1959; MD, 1963.

**Haller, Alex J., Jr.**, Clinical Professor  
BA, Vanderbilt University, 1947; MD, Johns Hopkins University, 1951.

**Hammond, Anthony F.**, Clinical Instructor  
BS, Seton Hall University, 1953; MD, University of Maryland, 1957.

**Hankins, John R.**, Associate Professor  
BA, University of Virginia, 1945; MD, University of Maryland, 1948.

**Hart, Umberto**, Associate  
BS, Emilio Prud'home School, 1954; MD, Santo Domingo Medical School, 1954.

**Henderson, Charles M.**, Assistant Professor  
BS, University of Maryland, 1955; MD, 1957.

**Hennessy, Robert G.**, Instructor  
BS, Holy Cross College, 1956; MD, Georgetown University, 1960.

**Herrmann, Raymond W.**, Assistant Professor  
BA, University of Illinois, 1941; MD, 1950.

**Hill, J. Laurance**, Associate Professor  
BA, Ohio Wesleyan University, 1957; MD, Ohio State University, 1961.

**Hilliker, Elizabeth**, Instructor  
BS, Washington University, 1965; MA, 1970; MD, 1970.

**Himelfarb, Terren M.**, Instructor  
BS, University of Maryland, 1961; MD, 1965.

**Holbrook, William A., Jr.**, Associate  
MD, University of Maryland, 1945.

**House, Homer C.**, Assistant Professor  
BS, Washington and Lee University, 1959; MD, George Washington University, 1964.

**Hubbard, Thomas B., Jr.**, Professor  
BA, Princeton University, 1938; MD, Columbia University, 1942; PhD (surgery), University of Minnesota, 1952.

**Hull, Harry C.**, Professor  
MD, University of Maryland, 1932.

**Jaques, Darrell Arthur**, Assistant Professor  
AB, University of Michigan, 1952; MD, 1957.

**Jasion, Arthur**, Instructor  
BS, University of Maryland, 1957; MD, 1959.

**Karmi, Said A.**, Associate Professor  
BS, American University of Beirut, 1960; MD, 1964.

**Keats, Neil M.**, Instructor, Orthopaedics  
BS, University of Michigan, 1965; MD, 1969.

**Kenzora, John E.**, Associate Professor  
MD, University of Toronto, 1965.

**Khaneja, Satish C.**, Instructor  
MB, BS, All India Institute of Medical Sciences, 1967.

**King, August D., Jr.**, Instructor  
BS, University of Maryland, 1957; MD, 1959.

**Lancelotta, Charles J.**, Instructor  
BA, Loyola College, 1964; MD, University of Maryland, 1968.

**Langenfelder, Henry E.**, Assistant Professor  
AB, Johns Hopkins University, 1947; MD, Hahnemann Medical College, 1951.

**Layne, Edward L.**, Instructor  
BS, Ohio State University, 1961; MD, 1965.

- Leveque, Hubert**, Assistant Professor  
MD, University of Lausanne, 1969.
- Leacock, Ferdinand S.**, Associate  
BA, Columbia College, 1956; MD, Howard Medical College, 1960.
- Lynn, William D.**, Assistant Professor  
BA, Princeton University, 1940; MD, Johns Hopkins University, 1943.
- Macon, William Linus, IV**, Associate  
AB, Princeton University, 1959; MD, Harvard Medical School, 1963.
- Manson, Paul N.**, Associate  
BA, Northwestern University, 1964; MD, 1968.
- Mason, G. Robert**, Professor and Chairman  
BA, Oberlin College, 1955; MD, University of Chicago, 1957; PhD (physiology), Stanford University, 1968.
- Mays, Howard B.**, Assistant Professor  
MD, University of Maryland, 1935.
- McHold, Davis S.**, Instructor  
BS, Moorehead University, 1962; MD, University of Maryland, 1967.
- McLaughlin, Joseph S.**, Professor  
BS, Loyola College, 1954; MD, University of Maryland, 1956.
- Mech, Karl, Jr.**, Instructor  
BA, Wesleyan University, 1964; MD, University of Maryland, 1968.
- Mech, Karl, Sr.**, Assistant Professor  
BS, University of Maryland, 1932; MD, 1935.
- Mehler, George J.**, Associate  
BA, New York University, 1959; MD, New York Medical College, 1963.
- Meyer, Paul D.**, Instructor, Neurosurgery  
BS, University of Maryland, 1955; MS, George Washington University, 1956; MD, University of Maryland, 1960.
- Michael, Roger H.**, Associate Professor  
BA, Oberlin College, 1953; MD, Western Reserve University, 1957.
- Miller, John F.**, Associate Professor  
BA, Pennsylvania State University, 1938; MD, Jefferson Medical College, 1942.
- Minken, Stanley L.**, Assistant Professor  
BS, University of Maryland, 1958; MS, George Washington University, 1959; MD, University of Maryland, 1963.
- Morgan, Thomas**, Professor  
MB, Cambridge University, 1943; MD, University College Hospital Medical School, London, 1945.
- Mosberg, William H., Jr.**, Professor, Neurosurgery  
BS, University of Maryland, 1943; MD, 1944.
- Moulsdale, James E.**, Instructor  
BS, Johns Hopkins University, 1967; MD, University of Maryland, 1971.
- Novin, Neil**, Clinical Assistant Professor  
BA, New York University, 1951; MD, State University of New York, 1955.
- O'Hearn, John Patrick**, Clinical Associate  
MD, Creighton University School of Medicine, 1972.
- Ominsky, Barry E. L.**, Instructor  
BS, University of Maryland, 1962; MD, 1966.
- Ordonez, Jorge R.**, Instructor  
MD, San Carlos University, 1963.
- Orlando, Joseph**, Assistant Professor  
BS, Loyola College, 1962; MD, University of Maryland, 1967.
- Ormsbee, Herbert, III**, Assistant Professor  
BA, Lawrence University, 1970; MS, University of Wisconsin, 1972; PhD, 1974.
- Padussis, Constantine J.**, Associate  
BS, University of Maryland, 1969; MD, 1973.
- Pardo, Juan M.**, Instructor  
BS, Loyola College, 1965; MD, University of Maryland, 1970.
- Phelan, Patrick C.**, Associate  
BA, Loyola College, 1935; MD, University of Maryland, 1942.
- Pidcock, Paulette C.**, Instructor  
BS, California State College, Pennsylvania, 1967; MA, University of Maryland, 1971.



- Pierpont, Ross Z.**, Clinical Assistant Professor  
BS, University of Maryland, 1939; MD, 1940.
- Plasse, Jerome**, Instructor  
AB, Columbia College, 1955; MD, New York University, 1959.
- Powder, James R.**, Assistant Professor  
BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.
- Ramsey, Harold E.**, Instructor  
BS, Knoxville College, 1950; MD, Meharry Medical College, 1956.
- Raneri, Anthony J.**, Instructor, General Surgery  
BS, Villanova University, 1967; MD, Georgetown University, 1971.
- Reed, William P.**, Assistant Professor  
AB, Harvard University, 1964; MD, 1968.
- Reichmister, Jerome P.**, Assistant Professor  
BA, Johns Hopkins University, 1960; MD, University of Maryland, 1964.
- Rever, William B., Jr.**, Assistant Professor  
MD, University of Maryland, 1950.
- Ritchie, George F.**, Instructor  
BS, Manhattan College, 1962; MD, Creighton University, 1966.
- Robbins, Martin A.**, Clinical Associate Professor\*  
AB, Johns Hopkins University, 1939; MD, University of Maryland, 1943.
- Robinson, Walker L.**, Assistant Professor  
BS, Morgan State College, 1962; MD, University of Maryland, 1970.
- Rosell, Luis A.**, Instructor, Otolaryngology  
MD, University of Seville, Spain, 1962.
- Russo, G. Lee**, Assistant Professor  
AB, Loyola College, 1955; MD, University of Maryland, 1959.
- Salcman, Michael**, Associate Professor\*  
BA, MD, Boston University, 1969.
- Sapre, Arun B.**, Instructor  
MB, BS, Medical College, Nagpur University, India, 1960.
- Schmeisser, Gerhard, Jr.**, Associate Professor  
AB, Princeton University, 1949; MD, Johns Hopkins University, 1953.
- Schneider, Richard J.**, Assistant Professor  
BA, University of Chicago, 1966; PhD (neuropharmacology), University of Pittsburgh, 1972.
- Sharrett, John O.**, Assistant Professor  
MD, University of Maryland, 1952.
- Shear, David Stephen**, Associate  
BS, University of Pittsburgh, 1969; MD, University of Maryland, 1973.
- Shermeta, Dennis W.**, Associate Professor  
MS, University of Michigan, 1961; MD, 1965.
- Shin, Young C.**, Instructor, Otolaryngology  
MD, Seoul National University, 1959.
- Shipley, Edgar R.**, Associate  
AB, Johns Hopkins University, 1938; MD, University of Maryland, 1942.
- Shpritz, Louis A.**, Instructor  
BS, University of Maryland, 1966; MD, 1970.
- Singer, John A.**, Assistant Professor  
BA, Cornell University, 1963; MD, State University of New York, Downstate Medical Center, 1967.
- Smith, Harry William**, Instructor  
AB, Providence College, 1965; MD, New Jersey College of Medicine, 1969.
- Smulyan, William I.**, Instructor  
BA, Franklin and Marshall College, 1965; MD, University of Maryland, 1969.
- Soliman, Joseph A.**, Instructor  
MD, College of Medicine, University of the Philippines, 1967.
- Sothoron, Warren H.**, Assistant Professor  
BS, Juniata College, 1958; MD, University of Maryland, 1962.
- Spence, Kenneth F.**, Instructor  
BS, Washington and Lee University, 1953; MD, University of Maryland, 1957.
- Stewart, Edwin H.**, Associate  
MD, University of Maryland, 1943.
- Stueber, Kristin**, Assistant Professor  
AB, Mount Holyoke College, 1965; MD, University of Maryland, 1969.

- Su, Chi-Tsung**, Assistant Professor  
MD, National Taiwan University, 1961.
- Suddhimondala, Chawalit**, Instructor  
MD, Siriraj Hospital and Medical School, Bangkok, Thailand, 1960.
- Sugar, Fred N.**, Instructor  
BS, University of Maryland, 1961; MD, 1965.
- Sullivan, Sullins G.**, Assistant Professor  
BS, University of Oklahoma, 1933; MD, 1935.
- Suter, Charles M.**, Assistant Professor  
BSEE, Drexel Institute, 1964; PhD (physiology), University of Maryland, 1969.
- Szczepinski, Adam F.**, Instructor  
AB, Johns Hopkins University, 1953; MD, 1959.
- Tansey, John J.**, Associate Professor  
AB, Brown University, 1942; MD, University of Maryland, 1945.
- Thompson, Raymond K.**, Professor, Neurosurgery  
BS, University of Maryland, 1937; MD, 1941.
- Tortolani, Edmund C.**, Instructor  
BA, Brown University, 1964; MD, Yale University, 1968.
- Turney, Stephen Z.**, Associate Professor  
BS, John Carroll University, 1955; MD, Georgetown University, 1959.
- Vorasubin, Varah**, Instructor  
MD, Siriraj Hospital, Thailand, 1967.
- Weiner, Israel H.**, Assistant Professor  
BA, Johns Hopkins University, 1949; MD, University of Maryland, 1953.
- Wenzlaff, Edward F.**, Assistant Professor  
BA, Columbia College, 1948; MD, University of Buffalo, 1954.
- Whitten, Thomas V.**, Associate  
BS, Mount Saint Mary's College, 1968; MD, University of Maryland, 1972.
- Wilensky, Robert J.**, Instructor  
BA, University of Michigan, 1962; MD, 1966.
- Wilhelmsen, Hans R.**, Assistant Professor  
DDS, University of Maryland, 1955; MD, 1959.
- Winakur, Stuart**, Instructor  
BS, University of Maryland, 1963; MD, 1968.
- Yeager, George H.**, Professor Emeritus  
BS, University of West Virginia, 1925; MD, University of Maryland, 1929.
- Young, John D., Jr.**, Professor  
BA, Bridgewater College, 1938; MD, University of Maryland, 1941.

# STUDENT ROSTER





### Class of 1979\*

ALTER, GEORGE/University of Maryland, College Park/San Diego Naval Hospital, California  
AUERBACH, DAVID/University of Maryland, College Park/Hospital of the University Health Center,  
Pittsburgh  
BAKAL, ARTHUR/University of Pennsylvania/Sinai Hospital, Baltimore  
BARBER, GREGORY/University of Maryland, College Park/Boston City Hospital  
BARR, PHILIP/University of Pennsylvania/Riverside Hospital, Virginia  
BAWTINHIMER, GARY/Virginia Polytechnic Institute and State/North Carolina Memorial  
BECKER, WILLIAM/Mount St. Mary's College/Youngstown Hospital, Ohio  
BEHOUNEK, BRUCE/Cornell College/University of Maryland Hospital  
BENDER, BRADLEY/Middlebury College/Baltimore City Hospitals  
BENDEREV, THEODORE/University of Maryland, College Park/University of California, San Diego  
BENNETT, MARILYN/Towson State College/Sinai Hospital, Baltimore  
BERARD, MICHAEL/Georgetown University/Prince George's General Hospital, Cheverly  
BERLINDER, DAVID/Boston University/Union Memorial Hospital, Baltimore  
BEUSCH, MARY PAMELA/College of St. Elizabeth/University of Maryland Hospital  
BLACKSIN, ADAM/Brandeis University/Baltimore City Hospitals  
BLASS, DAVID/University of Maryland, College Park/Washington Hospital Center  
BLUM, JOANNE/University of Pennsylvania/Michael Reese Hospital, Chicago  
BOSTWICK, DAVID/University of Maryland, Baltimore County/Stamford Hospital, Connecticut  
BRAUN, RICHARD/Towson State College/Charleston Medical Center, West Virginia  
BROWN, STEVEN/Trinity College/Maryland General Hospital, Baltimore  
CARROLL, KAREN/College of Notre Dame/University of Maryland Hospital  
CHAPMAN, JOHN/University of Maryland, College Park/West Virginia University Hospital  
COCKEY, JAMES/St. John's University/Maryland General Hospital, Baltimore  
COHEN, LOUIS/University of Maryland, College Park/University of Maryland Hospital  
COMMERFORD, CHRISTINE/Mount St. Mary's College/University of Maryland Hospital  
CONN, LOIS/Goucher College/University of Maryland Hospital  
COOKE, KEVIN/Bucknell University/University of Maryland Hospital  
CRABBE, HENRY/LaSalle College/Yale New Haven Medical Center, Connecticut  
CRANE, FRANKLIN/Brigham-Young University/Walter Reed Hospital, D.C.  
CROOKER, NANCY/Syracuse University/Massachusetts General Hospital, Boston  
DANISI, FLORA/University of Maryland, College Park/Medical Center Hospital of South Carolina  
DILLMAN, JUDITH/University of Utah  
DORR, ROBERT/Johns Hopkins University/Hospital of the University Health Center, Pittsburgh  
FELDMAN, BURT/University of Maryland, College Park/Sinai Hospital, Baltimore  
FINELLI, DANIEL/University of Maryland, College Park/William Shands Hospital, Florida  
FINKEL, MITCHELL/University of Maryland, College Park/Baylor College, Houston  
FISHER, MARK/University of Maryland, College Park/Case Western Reserve University, Cleveland  
FORMAL, CHRISTOPHER/Haverford College/Thomas Jefferson University, Philadelphia  
FRIEDMAN, GARY/Rensselaer Polytechnic Institute/Albany Medical Center, New York  
FRIEDMAN, SCOTT/Washington College/University of Maryland Hospital  
GABER, JEFFREY/Emory University/Mercy Hospital, Baltimore  
GABY, ALAN/Yale University/Union Memorial Hospital, Baltimore  
GALBLUM, LARRY/George Washington University/George Washington University, D.C.  
GIANNANDREA, PAUL/Johns Hopkins University/Bethesda Naval Hospital  
GIBBLE, LEON/University of Maryland, College Park/York Hospital, Pennsylvania  
GODFREY, PETER/University of Maryland, College Park/Charity Hospital, New Orleans  
GOODWIN, LYNDON/University of Maryland, College Park/William Shands Hospital, Florida  
GORALSKI, ROBERT/University of Maryland, Baltimore County/University of Maryland Hospital  
GORBACK, MICHAEL/Franklin and Marshall College/Brown University, Providence  
GREEN, BARBARA/Stanford University/Mount Zion Hospital, San Francisco  
GROSS, JOYCE/University of Maryland, College Park/University of Maryland Hospital  
HANSMAN, ARTHUR/University of Maryland, College Park/Andrews Air Force Base  
HAYWOOD, THOMAS/University of Maryland, College Park/University of Maryland Hospital  
HENDERSON, SCOTT/Virginia Polytechnic Institute/Mercy Hospital, Baltimore  
HERSHFIELD, BARTON/Bucknell University/University of Maryland Hospital.

\*Name/Undergraduate Institution/Internship

HIGHSTEIN, CHARLES/University of Pennsylvania/Union Memorial Hospital, Baltimore  
 HOFFMAN, JAN/University of California, Los Angeles/Los Angeles County USC Center  
 HORNER, BARBARA/Gettysburg College/Boston University Affiliated Hospitals  
 HUDSON, THOMAS/Carson-Newman College/Walter Reed Hospital, D.C.  
 HULL, MICHAEL/Tufts University/Maryland General Hospital, Baltimore  
 HUNT, JERRY/Loyola College/University of Maryland Hospital  
 HURLOCK, DONNA/Duke University/Washington Hospital Center, D.C.  
 IZZI, STEPHEN/Catholic University/University of Maryland Hospital  
 JACKSON, EVELYN/Pennsylvania State/University of Maryland Hospital  
 JOCHEN, ALBERT/University of Maryland, Baltimore County/Bronx Municipal Hospital Center, New York  
 JOFFE, STEVEN/George Washington University/Sinai Hospital, Baltimore  
 JOHNSON, CAROLINE/University of Delaware/Boston City Hospital  
 JOYCE-BRADY, MARTIN/University of Delaware/Boston City Hospital  
 KARESH, JAMES/Case Western Reserve/Children's Hospital, Washington, D.C.  
 KAYE, FREDERICK/Johns Hopkins University/Mount Sinai Hospital, New York  
 KELLY, SCOTT/Johns Hopkins University/University of California, Los Angeles  
 KIMMEL, ALAN/University of Maryland, Baltimore County/Union Memorial Hospital, Baltimore  
 KOEHLER, BRUCE/University of Notre Dame/Lackford Air Force Base  
 KOENIGSBERG, MAX/Washington College/Loyola University Affiliate, Maywood, Illinois  
 KOTEEN, GLEN/Emory University/Medical College of Pennsylvania, Philadelphia  
 KOWALYSHYN, MICHAEL/Lehigh University/Geisinger Medical Center, Danville, Pennsylvania  
 KOZLOVSKY, BERNARD/Johns Hopkins Hospital, Baltimore  
 LAPOSATA, ELIZABETH/Bucknell University/Johns Hopkins Hospital, Baltimore  
 LAVERSON, PERRI/University of Maryland, College Park/University of Texas, S.W., Dallas  
 LEBOW, RICHARD/University of Maryland, College Park/Union Memorial Hospital, Baltimore  
 LEE, OWEN/University of Maryland, College Park/Indiana University Medical Center, Indianapolis  
 LEVIN, ROBERT/University of Maryland, College Park/Sinai Hospital, Baltimore  
 LEVINE, ZENA/Case Western Reserve/University Sinai Hospital, Baltimore  
 LEVITT, ROY/University of Maryland, College Park/Johns Hopkins Hospital, Baltimore  
 LEVY, SUSAN/College of Notre Dame/Medical Center, S.C., Charleston  
 LI, KWOK-CHEUNG LUKE/Syracuse University/George Washington University, D.C.  
 LOEVINGER, BARBARA/University of Wisconsin/University Hospitals Madison, Wisconsin  
 LOEVINGER, ERIC/Duke University/Medical College, S.C., Charleston  
 LOW, TIMOTHY/University of Maryland, College Park/San Francisco-Army  
 MACHADO, EUGENIO/University of Maryland, College Park/Maryland General Hospital, Baltimore  
 MALOUF, GEORGE/Georgetown University/Maryland General Hospital, Baltimore  
 MANDRIS, LOUIS/University of Maryland, College Park/Georgetown University, D.C.  
 MARSELLA, RICHARD/St. Anselm's College/Walter Reed Hospital, D.C.  
 MARSHALL, BRUCE/Johns Hopkins University/Strong Memorial, New York  
 MARTIN, CRAIG/Emory University/Maryland General Hospital, Baltimore  
 MCCURDY, BRUCE/University of Pennsylvania/St. Agnes Hospital, Baltimore  
 MCDIARMID, MELISSA/University of Maryland, Baltimore County/Jefferson University, Philadelphia  
 MCKAY, MARY CAROLYN/University of Maryland, College Park/Baylor University, Houston  
 MCWILLIAMS, WAYNE/Western Maryland College/University of Maryland Hospital  
 MEANS, ROBERT/University of Maryland, College Park/St. Agnes Hospital, Baltimore  
 MILLER, KATHLEEN/Gettysburg College/Mercy Hospital, Baltimore  
 MOORE, WALTER/Johns Hopkins University/Hospital of the University of Pennsylvania, Philadelphia  
 MORGAN, SUNDAY/Temple University/University of Maryland Hospital  
 MOSBERG, STEPHEN/Western Maryland College/United Hospital Center West Virginia, Clarksburg  
 MOY, RUSSELL/University of Maryland, College Park/University of Maryland Hospital  
 NAGLE, DAVID/University of Maryland, College Park/Children's Hospital, Washington, D.C.  
 NEILD, FRANK/University of Wisconsin, Madison/Sheppard-Pratt Hospital, Baltimore  
 NICHOLS, GEORGE/California State College/University of Tennessee, Knoxville  
 NIKOLAIDIS, TED/Johns Hopkins University/William Shands Hospital, Florida  
 OAKS, LINDA/University of Maryland, College Park/University of Maryland Hospital

OBRECHT, WILLIAM/East Carolina University/Mercy Hospital, Baltimore  
OH, YEONG/University of Maryland, College Park/Mercy Hospital, Baltimore  
ORENTZIO, LOUIS/Gettysburg College/United Hospital Center West Virginia, Clarksburg  
PARKHURST, MARK/University of Maryland, College Park/Prince George's General Hospital,  
Cheverly

PEARLMAN, STEVEN/University of Maryland, Baltimore County/New York Hospital, White Plains  
POPKIN, HOWARD/University of Maryland, College Park/University of Maryland Hospital  
PRINCE, DAVID/University of Maryland, Baltimore County/University of Maryland Hospital  
RAPPAZZO, JOSEPH ALAN/Duke University/Good Samaritan, Phoenix  
REEDER, JOHN/Wake Forest University/William Shands Hospital, Florida  
RICHARDS, WILLIAM/Dickinson College/William Shands Hospital, Florida  
RORK, PETER/Rutgers University/University of New Mexico, Albuquerque  
ROSENBERG, BRUCE/Washington College/University of Maryland Hospital  
ROSENTHAL, MARK/University of Maryland, Baltimore County/Vanderbilt University, Nashville  
ROVNER, ROBERT/University of Maryland, College Park/University of California, Irvine  
SANT ANTONIO, ALBERTO/Towson State/Mercy Hospital, Baltimore  
SCALLION, GERALD/Mount St. Mary's College, University of Maryland Hospital  
SCHOLZ, RICHARD/Johns Hopkins University/Union Memorial Hospital, Baltimore  
SCHULDENFREI, JEFFREY/University of Maryland, College Park/Mercy Hospital, Baltimore  
SCIALDONE, ANTHONY/University of Maryland, College Park/Mercy Hospital, Pittsburgh  
SHIPMAN, DEBORAH/Bard College/Boston City Hospital  
SIEGEL, DAVID/Columbia University/Baltimore City Hospitals  
SIERRA, RADAMES/University of Mayaguez, Puerto Rico/Georgetown Veterans Hospital, Wash-  
ington, D.C.

SIMONS, DENISE L./University of Maryland, College Park  
SMITH, MICHAEL/University of Notre Dame/Bridgeport Hospital, Connecticut  
SMITH, VERNON, JR./Bates College/Alabama Medical Center, Birmingham  
SNOW, DOROTHY/Dartmouth College/University of Maryland Hospital  
SPONSELLER, HARRY/University of Maryland, College Park/University of Maryland Hospital  
ST. JOHN, KEVIN/University of Maryland, College Park/Andrews Air Force Base, D.C.  
STEINBERG, POLLY/University of Maryland, College Park/Sinai Hospital, Baltimore  
STONE, NELSON/Connecticut College/University of Maryland Hospital  
STRACKE, MARY/University of Maryland, College Park/Baltimore City Hospitals  
STRAHAN, SUSAN/Hollins College/University of Maryland Hospital  
SUGHRUE, MAURA/Washington University/University of Florida Alachua General, Gainesville  
SYMONS, JOHN/Salisbury State College/Altoona Hospital, Pennsylvania  
TAPPER, DAVID/Johns Hopkins University/Williamsport Hospital, Pennsylvania  
TARR, WILLIAM/Johns Hopkins University/Johns Hopkins Hospital, Baltimore  
TEGELER, JAMES/Michigan Technology University/York Hospital, Pennsylvania  
TILLEY, LAWRENCE/Johns Hopkins University/Johns Hopkins Hospital, Baltimore  
TSO, ELIZABETH/University of Maryland, College Park/University of Maryland Hospital  
TSOY, EDWARD/Cornell University/Washington Hospital Center, D.C.  
TUCKER, STEVEN/Harvard University/St. Agnes Hospital, Baltimore  
UMBACH, REBECCA/Elizabethtown College/Children's Hospital of Ohio, Akron  
VINCENT, THOMAS/University of Maryland, College Park/Union Memorial Hospital, Baltimore  
VOLATILE, THOMAS/Emory University/Grady Memorial Hospital, Atlanta  
WARD, JERALD/Brandeis University/Union Memorial Hospital, Baltimore  
WEIGEL, JOHN/Northwestern University/University of Maryland Hospital  
WEISMAN, HARLAN/University of Maryland, College Park/Mt. Sinai Hospital, New York  
WIENER, STUART/University of Maryland, College Park/Wayne State University, Detroit  
WILLIAMS, SAMUEL/Johns Hopkins University/St. Agnes Hospital, Baltimore  
WOLKOWITZ, OWEN/New York University/Stamford Hospital, Connecticut  
WOODWARD, ARTHUR/Duke University/University of Maryland Hospital  
WRIGHT, HAROLD, R., JR./Johns Hopkins University/Union Memorial Hospital, Baltimore  
YOKEL, Yael/University of Maryland, College Park/Union Memorial Hospital, Baltimore  
YOUNG, ERIK BRIAN/University of Maryland, College Park/Georgetown University, D.C.  
ZARFOS, KRISTEN/Hood College/Yale New Haven Medical Center, Connecticut  
ZUBKOFF, GERALD/Cornell University/Hospital of the University Health Center, Pittsburgh



## Class of 1980

AIKEN, BRADLEY/Boston University  
ALLEN, DAVID/Pennsylvania State University  
AMMLUNG, ROBERT/Indiana University, Bloomington  
ANSHER, MICHAEL/University of Maryland, College Park  
ARTWOHL, ROBERT/University of Maryland, Baltimore County  
ATABEK, UMUR/Catholic University of America  
ATAGUN, MEHTAP/Johns Hopkins University  
BAINUM, MARK/Southern Missionary College  
BAYNE, MELVIN/Catholic University of America  
BELL, BARBARA (WEI)/William and Mary College  
BELL, LOUIS/Johns Hopkins University  
BRAGER, MYLES/University of Maryland, College Park  
BROWN, DONALD/Howard University  
BROWN, LAWRENCE/Johns Hopkins University  
BRUNNER, DOUGLAS/University of Chicago  
BRYANT, DUANE/University of Maryland, College Park  
BUSKIRK, ERIC/Georgetown University  
BUTLER, FRANCIS/Loyola College  
CAMPBELL, TERENCE/Duke University  
CAPUTO, GREGORY/University of Delaware  
CARROLL, DOUGLAS/Yale University  
CASCIO, WAYNE/Johns Hopkins University  
CERVENKA, ROBERT/Emory University  
CHAYT, KAREN/Yeshiva University  
CHEKAN, GEORGE/Bucknell University  
CHEN, JANE/Radcliffe College  
CHISOLM, DANIEL/Columbia Union College  
COHEN, HARRIET/University of Maryland, College Park  
COON, PATRICIA/Marquette University  
CRAGWAY, ROY/Morgan State University  
CRAWFORD, JOSEPH/Ohio State University; University of Santo Tomas, Philippines  
CRUTE, CATHERIN/Gettysburg College; Catholic University  
CYLUS, KIRK/Johns Hopkins University  
D'ANTONIO, RICHARD/Washington and Lee University  
DAVIS, WINTHROP/Franklin and Marshall University  
DEDRICK, DALE/University of Maryland, College Park  
DICKMAN, CRAIG/University of Maryland, College Park  
DODDS, ANGUS/Johns Hopkins University  
DRIGGS, DARRYL/Brigham-Young University  
DRISCOLL, PAUL/University of Maryland, College Park  
DUNLAVEY, MARGARET/University of Maryland, College Park  
DUNN, JESSE/University of Maryland, College Park  
DURKIN, MAUREEN/University of Maryland, College Park  
EBY, MARGARET/Loyola College  
EHRlich, SONIA/Radcliffe College  
FALLOON, JUDITH/Ohio State University  
FERGUSON, DALE/Wilmington College  
FIASTRO, JAMES/Loyola College  
FISHBEIN, DAVID/University of Maryland, College Park  
FOX, KENNETH/Occidental College  
FOXWELL, MILFORD/University of Maryland, College Park  
FRANKS, DAVID/University of Maryland, College Park  
FRIDIE, DONNA/Spelman College  
FRIEMAN, MOSHAY/University of Maryland, College Park  
FRYE, DONALD/George Washington University  
GALITZ, RICHARD/University of Maryland, College Park

GATTO, VINCENT/American University  
 GELLETLY, GRACE/University of Maryland, College Park  
 GELMAN, ALAN/University of Pennsylvania  
 GINSBERG, ROBERT/Vassar College  
 GOFREED, DEBORAH/Duke University  
 GOLDBERG, ANDREW/Dartmouth College  
 GOLDKIND, LAWRENCE/University of Pennsylvania  
 GOLDMARK, MARCIA (PARGAMENT)/University of Maryland, College Park  
 GOLUEKE, PETER/University of Maryland, College Park  
 GRIMM, SAMUEL/University of Maryland, College Park  
 HARRIS, HARRY/University of Maryland, Baltimore County  
 HEINEN, ROBERT/University of Minnesota, St. Paul  
 HELMAN, LEE/George Washington University  
 HENKE, ROBERT/Mount St. Mary's College  
 HENRY, ANNE/Smith College  
 HERALD, GEOFFREY/Ohio State University  
 HILLEBRENNER, SUSAN/Johns Hopkins University  
 HIMMELHEBER, MARK/University of Maryland, College Park  
 HIXON, DENA/Bridgewater College  
 HLADIK, KAREN/Towson State University  
 HOFFMAN, MICHAEL/University of Maryland, College Park  
 HOUGHTON, JAN/Virginia Polytechnic Institute  
 HOYLE, CHARITA/University of Maryland, College Park  
 HUDDLESTON, CHRISTJON/Stanford University  
 HUHNS, RICHARD/American University  
 IKEDA, STEPHEN/George Washington University  
 JURIST, KENNETH/University of Maryland, College Park  
 KAPLAN, M. LAWRENCE/Hofstra University  
 KARWACKI, JEROME/Loyola College  
 KELLNER, MIRIAM/Albertus Magnus College  
 KEMERER, VERNE/University of South Florida  
 KESSLER, MICHAEL/George Washington University  
 KING, JAMES/University of Maryland, College Park  
 KIRKWOOD, CHRISTINE/University of Maryland, College Park  
 KLEIMAN, JEFFREY/Emory University  
 KLEIN, DAVID/University of Maryland, College Park  
 KUNZE, KENNETH/University of Maryland, College Park  
 LAESSIG, SUSAN/Cornell University  
 LAMM, WILLIAM/University of Maryland, Baltimore County  
 LAPINSKY, PETER/Colgate University  
 LEE, BARRY/Harvard University  
 LEE, CHARLES/University of Maryland, College Park  
 LEESON, MARK/West Virginia Wesleyan College  
 LERNER, BRIAN/University of Maryland, College Park  
 LINDSEY, INGA/Johns Hopkins University  
 LIPIN, THOMAS/Loyola College  
 LIVENGOD, JOHN/William and Mary College  
 LUNDE, MICHAEL/Lenoir-Rhyne College  
 MAGGIN, ROBERT/University of Maryland, College Park  
 MANOLIO, TERI ANN/University of Maryland, College Park  
 MARASA, RICHARD/Rutgers University  
 MARGOLIS, JOHN/Franklin and Marshall College  
 MARKOWITZ, DAVID/Pennsylvania State University  
 MARX, BARRY/University of Pennsylvania  
 MATCHAR, DAVID/Princeton University  
 MATTHEWS, LAURIE/Western Maryland College  
 MCCAILL, MARGARET/University of Maryland, College Park

MCCAULEY, JEANNE/University of Delaware  
 MCDONNELL, MARK/Johns Hopkins University  
 MCKENNA, JAMES/University of Maryland, College Park  
 MCLAUGHLIN, TIMOTHY/American University  
 MCLELLAN, ROBERT/Boston College  
 MIDDLETON, JOHN/Mount St. Mary's College  
 MILLER, STEVEN/University of Pennsylvania  
 MILLES, GARY/State University of New York, Albany  
 MINKOVE, JUDAH/Yeshiva University  
 MORAN, THOMAS/University of California, Santa Barbara  
 MORITZ, MICHAEL/University of Pennsylvania  
 MORRIS, EUGENE/Loyola College  
 NEWKIRK, MARY/University of Maryland, College Park  
 NICHOLSON, MYRON/University of Maryland, College Park  
 OKTAVEC, WILLIAM/Loyola College  
 ORENSTEIN, ERIC/Georgetown University  
 OSBORN, KEITH/Western Maryland College  
 OTTO, DAVID/University of Maryland, College Park  
 OWENS, DAVID/Washington College  
 PALDER, STEVEN/University of Maryland, College Park  
 PAUL, CRAIG/Johns Hopkins University  
 PORTENOY, RUSSELL/Cornell University  
 POSEY, GUY/University of Maryland, College Park  
 POWERS, CATHY/University of Maryland, Baltimore County  
 PRATT, MICHAEL/University of Maryland at Baltimore  
 REKEDAL, KIRBY/St. Olaf College  
 RICHARDSON, JAMES/University of Maryland, Baltimore County  
 RIGHETTI, MICHAEL/University of Santa Clara  
 RIVAS, PAUL/Loyola College  
 ROBERTSON, ROGER/University of Maryland, College Park  
 RODGERS, TIMOTHY/Johns Hopkins University  
 ROGERS, WILLIAM/Johns Hopkins University  
 ROMANO, CHARLES/Frostburg State College  
 ROSENBLOOM, ALAN/University of Maryland, Baltimore County  
 ROSSE, RICHARD/University of Maryland, College Park  
 RUDISILL, DOUGLAS/Cornell University  
 RUDOLPH, ROBERT/Marietta College  
 RUPPEL, JAMES/University of California, San Diego  
 RYKER, MARTHA/University of Maryland, Baltimore County  
 SACKS, ALAN/Emory University  
 SCHARLING, CHRISTOPHER/University of Maryland, College Park  
 SCHEPP, ROBERT/Johns Hopkins University  
 SCHIFF, ROBERT/University of Maryland, College Park  
 SCHNEIDERMAN, DAVID/University of Maryland, College Park  
 SILLS, ALVIN/Loyola College  
 SILVER, KENNETH/University of Michigan, Ann Arbor  
 SMOOT, ROY/University of Maryland, Baltimore County  
 SOKOLOW, MARC/University of Maryland, College Park  
 SOLOMON, LOUIS/Towson State University  
 SONDERGAARD, SALLY/Brown University  
 SPECHT, CHARLES/University of Pittsburgh  
 SPIEGEL, LADD/Amherst College  
 STAMAS, PETER/University of Pennsylvania  
 STARTZMAN, HENRY/Duke University  
 STERN, DOROTHEA/Morgan State University  
 SUNDERMIER, HENRY/California Polytechnic State University  
 TAKAI, SANDY/Washington College



TANNEBAUM, ERIC/University of Pittsburgh  
TRINH, PHUONG/Massachusetts Institute of Technology  
TULLY, KATE/Villanova University  
TURNER, PAUL/University of Maryland, College Park  
WALSH, JAMES/State University of New York, Albany  
WEKER, JONATHAN/Harvard University  
WHITTAKER, PAUL/Duke University  
WIEGMANN, FRANCIS/Johns Hopkins University  
WIGAND, GWENDOLYN/University of Maryland, College Park  
WILKES, CHARLES/William and Mary College  
WILLIAMS, CARTER/Morgan State University  
WOOLSTON, VICTORIA/Salisbury State College  
WRIGHT-WILSON, CHERYL/University of Washington

#### **Class of 1981**

ABBOTT, PETER/Dickinson College  
ARCHER, THOMAS/University of Richmond  
BALASUBRAHMANYAH, RAVI/University of Maryland, College Park  
BARKER, PETER/Stanford University  
BARTHEL, ROBERT/University of Maryland, Baltimore County  
BECKER, STEPHEN/University of Maryland, Baltimore County  
BERG, HOWARD/Emory University  
BIELEFELD, JOAN/William and Mary College  
BIERMAN, MORRIS/University of Maryland, College Park  
BLANCHARD, MICHAEL/Berry College  
BOLDEN, RICHARD/Washington and Lee University  
BOLLING, BRUCE/University of Maryland, College Park  
BOSTON, JOSE'/Loyola College  
BOULAY, JR., JOSEPH/Duke University  
BOYCE, STEVEN/Johns Hopkins University  
BRIGGS, LINWOOD/Juniata College  
BUSSE, SUSAN/University of Maryland, College Park  
CALVO, BENJAMIN/George Washington University  
CAMPBELL, STEPHEN/Loyola College  
CANNON, MARY JO/George Washington University  
CAREY, RICHARD/University of San Francisco  
CARLTON, JAMES/University of Maryland, Baltimore County  
CARROLL, BARBARA/University of Maryland, College Park  
CHADO, HERBERT/University of Maryland, Baltimore County  
CHAMBERS, CHARLES/St. Bonaventure University  
CHANDLER, CANDACE/Duke University  
CHAPA, ROBERT/Valparaiso University  
CHOW, STEVE/Johns Hopkins University  
CLEMMENS, MICHAEL/Loyola College  
COHEN, DEBORAH/Wesleyan University  
COHEN, WILLIAM/Massachusetts Institute of Technology  
COLUCCIELLO, STEPHEN/University of Virginia  
CONLEY, ROBERT/Johns Hopkins University  
COOL-FOLEY, ALICIA/Johns Hopkins University  
COPE, JAMES/LaSalle College  
COPELAND, IRA/University of Maryland, College Park  
COX, LLOYD/Emory University  
DERKACH, MARY CAROL/Loyola College  
DEWITT, MICHAEL/West Virginia Wesleyan College  
DIER, GARY/University of Maryland, College Park  
DIPIETRO, VINCENT/Loyola College

DOLLYMORE, MAURA/Catholic University of America  
 DOMBROWSKI, WILLIAM/Rutgers University  
 DOYLE, KEVIN/Johns Hopkins University  
 DRUPIESKI, MARY/University of Maryland, College Park  
 DUBYOSKI, PATRICIA/Fairfield University  
 DUNCAN, ROBERT/Loyola College  
 EGLSEDER, JR., W. ANDREW/Tourd College  
 EHRLICH, PAULA/University of Maryland, College Park  
 ELLARD, GEORGE/Bowdoin College  
 FELDMAN, LAWRENCE/University of Maryland, College Park  
 FERRICK, DANIEL/St. Mary's Seminary and University  
 FINKELSTEIN, JOSEPH/Albright College  
 FLACCAVENTO, FRED/Utah State University  
 FLANIGAN, JOHN/University of Miami  
 FRIEDLANDER, NEAL/University of Pennsylvania  
 FRONC, ELIZABETH/Georgetown University  
 FRYE, PATRICIA/Manhattanville College  
 FULD, ROBERT/University of Maryland, College Park  
 GAINES, WAYNE/University of Maryland, College Park  
 GAZAWAY, PRESTON/Florida A & M University  
 GELKIN, MICHELLE/University of Maryland, College Park  
 GESSOUROUN, MORRIS/University of Maryland, Baltimore County  
 GIANNANDREA, LEIGH/Johns Hopkins University  
 GLORIOSO, ROBERT/Geneva College  
 GOLD, SAMUEL/University of Maryland, College Park  
 GRIFFIN, HOPE/Cornell University  
 GROFF, WARREN/University of Maryland, Baltimore County  
 GUNN, ANDREW/Ohio Wesleyan University  
 HATEM, JOANNE/Georgetown University  
 HOLT, GEORGINA/University of Maryland, College Park  
 HOOPER, CAROL/University of North Carolina, Chapel Hill  
 HSIAO, JOHN/Yale University  
 JACOBS, HOWARD/University of Maryland, College Park  
 JACOBS, PAMELA/University of Maryland, College Park  
 JAFFE, MARC/University of Maryland, College Park  
 JASKULSKY, STEVEN/Western Maryland College  
 JOCKLE, GLENN/University of North Carolina State, Raleigh  
 JOHNSON, HOWARD/Rensselaer Polytechnic Institute  
 JUDE, COLLEEN/Howard University  
 KAHN, BRIAN/University of Pennsylvania  
 KAHN, JOEL/George Washington University  
 KEELER, MARGARET/St. Lawrence University  
 KINGRY, KAREN/University of Maryland at Baltimore  
 KIRWIN, KATHRYN/Bryn Mawr College  
 KLEIN, JOEL/University of Maryland, College Park  
 KNOTZ, JOSEPH/University of California, Los Angeles  
 KORAT, ORLY/University of Maryland, College Park  
 LAKSHMANAN, MARK/University of Maryland, College Park  
 LAVALLE, GREGORY/University of Maryland, College Park  
 LEIER, LINDA/College of Notre Dame  
 LEUNG, RICHARD/University of Maryland, College Park  
 LEVIN, RANDY/University of Maryland, College Park  
 LEVITT, ROBERT/University of Maryland, Baltimore County  
 LOVELESS, HERBERT/Johns Hopkins University  
 LYG, PHILIP/University of Maryland, College Park  
 MAGNER, ALICE/Harvard University  
 MALINOW, ANDREW/Johns Hopkins University

MANDELL, GORDON/University of Maryland, College Park  
 MANN, STEPHEN/University of Maryland, College Park  
 MARSHALL, CAROL/Goucher College  
 MASIN, FRANKLIN/University of Maryland, College Park  
 MASTRUCCI, MARY/Catholic University of America  
 MAURER, SCOTT/University of Maryland, College Park  
 MCCLURE, DAVID/University of Maryland, Baltimore County  
 MEYERS, DALE/Johns Hopkins University  
 MIGHTY, HUGH/Georgetown University  
 MILLER, DAVID/Washington College  
 MONDELL, DEAN/Loyola College  
 MULLEN, PAUL/Dickinson College  
 NEUMAN, KATHRYN/Bucknell University  
 OKUN, MARC/Johns Hopkins University  
 ONG, ROSE/University of Maryland, College Park  
 OZANNE, STEPHEN/University of Maryland, College Park  
 PANZARELLA, PHILIP/Loyola College  
 PERTSCH, JAMES/Loyola College  
 PIVEN, JOSEPH/University of Maryland, College Park  
 POLLACK, ALAN/University of Maryland, College Park  
 POLLACK, DEBORAH/University of Maryland, College Park  
 POTOCKI, LANCE/Georgetown University  
 POWELL, JAMES/Towson State University  
 RABOVSKY, MICHAEL/University of Pennsylvania  
 REID, ROBERT/Colorado College  
 REILLY, JOSEPH/St. Francis College  
 REVER, LINDA/Goucher College  
 RHODES, SHEILA/University of Pittsburgh  
 RICHARDSON, LORINDA/University of Maryland, College Park  
 RIGHETTI, MARIYLN/St. Mary's College of California  
 RINIS, DONNA/University of Maryland, College Park  
 ROBINSON, HOWARD/University of Maryland, College Park  
 RORISON, DAVID/Johns Hopkins University  
 SANDERS, ANDREW/University of Maryland, College Park  
 SCHEIN, JAY/University of Pennsylvania  
 SCHEPP, SUSAN/Johns Hopkins University  
 SCHILLO, JOHN/Amherst College  
 SCHIMPF, PATRICK/University of Maryland, College Park  
 SCHNAPER, LAUREN/University of Maryland at Baltimore  
 SHAW, LINDA/DePauw University  
 SHEA, FRANK/Pennsylvania State University  
 SHITAMA-BLOOM, YUMI/University of Maryland, College Park  
 SIEGEL, HOWARD/University of Maryland, College Park  
 SILBER, GARY/Washington University  
 SIMON, MICHAEL/Pepperdine University  
 SINCLAIR, JOHN/University of Connecticut  
 SKARBEEK, JERRY/University of Michigan, Ann Arbor  
 SMITH, JEFFREY/Villanova University  
 SMITH, SAMUEL/George Washington University  
 SOKAL, DINA/Goucher College  
 SONG, WOO KWANG/Lindenwood College  
 SPENCER, LELAND/Northland College  
 SPERLING, CARL/University of Maryland, Baltimore County  
 SPIER, SCOTT/Brown University  
 STEGA, MARK/University of Maryland, College Park  
 STEINBERG, JOHN/Michigan State University  
 STERRETT, MICHAEL/Michigan State University



STOWELL, MICHAEL/Springfield College  
 SUSKIN, MURRAY/Washington College  
 TAYLOR, GREGORY/University of Maryland, Baltimore County  
 THOMPSON, EDWARD/Randolph-Macon College  
 TIETJEN, DAVID/Duke University  
 TOMINACK, REBECCA/University of Maryland at Baltimore  
 TOWNSEND, FRANCIS/Davidson College  
 TRENT, KAREN/University of Pittsburgh  
 ULMER, EMILY/Western Maryland College  
 VALLE, PAUL/Loyola College  
 VERDIN, PETER/University of Colorado  
 VIGOREAUX, JOSE'/University of Rio Piedras, Puerto Rico  
 VOIGHT, ROBERT/University of Maryland, College Park  
 WACK, ELIZABETH/University of Maryland, College Park  
 WAMSLEY, BRIAN/University of Maryland, College Park  
 WARFIELD, MARY/Georgetown University  
 WATT, DAVID/University of Maryland, College Park  
 WATTERS, EDWARD/University of Maryland, College Park  
 WEBER, DAVID/University of Colorado  
 WEISS, LAWRENCE/University of Maryland, College Park  
 WHITAKER, NELLIE/University of Maryland, College Park  
 YOUSEM, SAMUEL/Duke University  
 ZIBILICH, GLORIA/Clarke College; University of Iowa  
 ZIMMERMAN, LAURIE/University of Maryland, College Park  
 ZWEIER, JAY/Brandeis University

#### **Class of 1982**

ADELSON, ANDREW J./Haverford College  
 ALAND, CHRISTOPHER/Loyola College  
 ALONSO, LYNN/Goucher College  
 ANSHER, ALAN/University of Maryland, College Park  
 ARMSTRONG, JOHN/Washington College  
 ARNAUD, GUILLERMO/Massachusetts Institute of Technology  
 BAER, JOHN/Swarthmore College  
 BANERJEE, CHANDRALEKHA/Tufts University  
 BARBER, WAYNE/University of Maryland, College Park  
 BARNES, DAVID/Georgetown University  
 BARRY, HENRY/University of Maryland, College Park  
 BEVINS, CHARLES/University of Maryland, Baltimore County  
 BLANK, KENNETH/Georgetown University  
 BLICK, SAMUEL/University of North Carolina, Chapel Hill  
 BOLLENS, BRUCE/Amherst College  
 BOYER, GOERGE/Gettysburg College  
 BRANDCHAFT, PHYLLIS/University of Wisconsin, Madison  
 BRILL, CLARK/University of Maryland, Baltimore County  
 BROCKMAN, PAUL/Bucknell University  
 BROWN, MICHAEL/University of Maryland, College Park  
 BURKEN, MITCHELL/University of Michigan, Ann Arbor  
 BUSHWICK, BRUCE/University of Michigan, Ann Arbor  
 CAPON, STEPHEN/Cornell University  
 CARR, BETTY-ANN/University of Maryland, Baltimore County  
 CARR, ROBERT/University of Delaware  
 CARROLL, CHARLES/Williams College  
 CATANZARITI, FRANK/Johns Hopkins University  
 CHAPOLINI, ROBERT/Loyola College  
 CHIPCHIN, JUDITH/University of Maryland, College Park

CHRISTIANSON, RONALD/Lynchburg College  
 CHROMIAK, S. BLAISE/Johns Hopkins University  
 CHU, KEVIN/Princeton University  
 CONNELLY, JR., JOSEPH/University of Maryland, Baltimore County  
 CONWAY, THOMAS/Clemson University  
 COOLEY, BRIAN/University of Maryland, College Park  
 COOPER, ROBERT/Wabash College  
 COSTENBADER, CYNTHIA/University of Maryland, College Park  
 DAMALOUJI, JAMES/University of Pittsburgh  
 DARRELL, JOHN/Johns Hopkins University  
 DENNIS, PATRICK/University of Maryland, College Park  
 DIGRAZIA, JOHN/University of Maryland, Baltimore County  
 DONALDSON, JOANN/Catholic University of America  
 ECK, CHARLES/Loyola College  
 ELDER, DAVID/University of Virginia  
 ELIAS, JONATHAN/University of Maryland, College Park  
 ELLIS, JR., ALBERT/Howard University  
 FADDEN, ROBERT/Loyola College  
 FITZPATRICK, JAMES/Brown University  
 GALVIN, THOMAS/Washington and Lee University  
 GARG, RENU/University of Maryland, College Park  
 GARTLAND, PATRICK/Northwestern University  
 GENOVESE, JR., JOSEPH/University of Maryland, College Park  
 GEVAS, STEVEN/West Virginia University  
 GIBBS, WARREN/State University of New York, Buffalo  
 GILBERT, LINDA/University of Maryland, College Park  
 GNATT, MICHAEL/University of Maryland, College Park  
 GRAN, DAVID/University of Maryland, College Park  
 GROLEAU, GEORGE/University of Maryland, College Park  
 HADLEY, NANCY/Harvard University  
 HALL, JAMES/University of Pennsylvania  
 HARBAGE, PETER/University of Virginia  
 HARRIS, MARK/Johns Hopkins University  
 HICKS, CHARLES/Loyola College  
 HIRSCHMAN, CORINA/George Washington University  
 HOLT, EDWARD/Brown University  
 HOLT, JAMES/Princeton University  
 HOPE, DONALD/Villanova University  
 HORNICK, DOUGLAS/St. Lawrence University  
 HUNDEMER, KAREN/University of Maryland, College Park  
 JACOBS, RONALD/University of Maryland, College Park  
 JACQUES, LOUIS/Georgetown University  
 JED, ERICA/University of Maryland at Baltimore  
 JONES, MARY BETH/Catholic University of America  
 KAUP, BRUCE/Stanford University  
 KEARNEY, JAMES/University of Maryland, College Park  
 KELLER, MARK/University of Maryland, College Park  
 KELSEY, BEVERLY/University of Maryland, College Park  
 KLEIN, JEREMY/University of Maryland, Baltimore County  
 KLIMCZAK, KAREN/Loyola College  
 KOLODRUBETZ, RICHARD/University of Maryland, College Park  
 KRUKENKAMP, JR., IRVIN/University of Maryland, College Park  
 KURLAND, DARRYL/Duke University  
 KUSHNICK, RICHARD/University of Maryland, Baltimore County  
 KYLE, JR., RICHARD/Catholic University of America  
 LAI, DONALD/University of Pennsylvania  
 LAMPE, JOHN/University of North Carolina, Chapel Hill

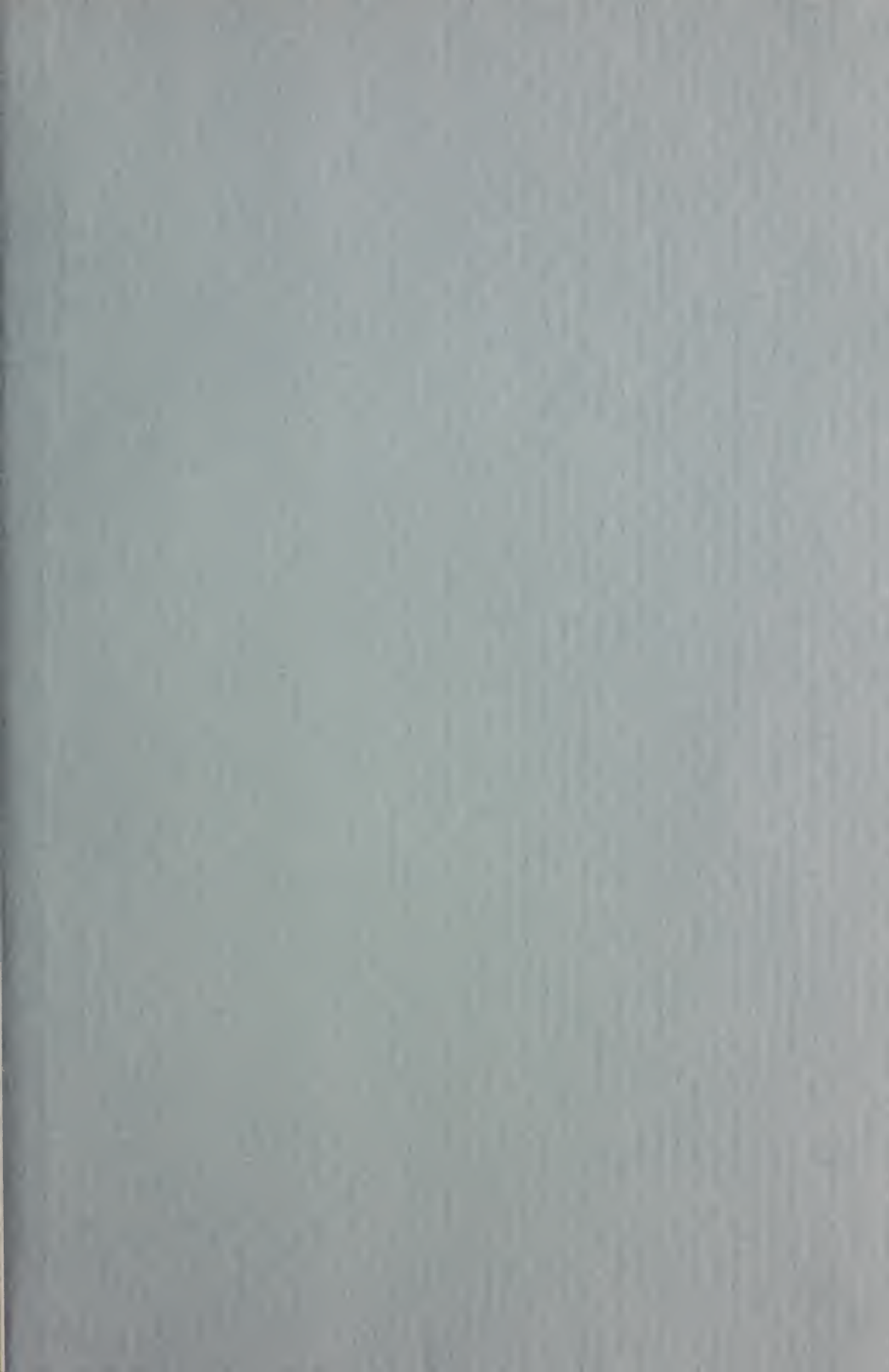
LANE, RICHARD/University of Maryland College Park  
 LANOCHA, KARL/Towson State University  
 LEBAR, RANDI/Cornell University  
 LERMAN, CAROLE/University of Pennsylvania  
 LEVITT, LORE/Johns Hopkins University  
 LEVINE, GARY/Johns Hopkins University  
 LINTHICUM, RICHARD/Salisbury College  
 LOVE, REBECCA/Johns Hopkins University  
 LOWENTHAL, JONATHAN/University of Maryland, College Park  
 LUCEY, CHARLES/Georgetown University  
 LUTTGE, SCOTT/University of Maryland, Baltimore County  
 MALONEY, DANIEL/University of Dayton  
 MAYLACK, FALLON/Johns Hopkins University  
 MENDLOWITZ, ABBE/Johns Hopkins University  
 MERCHANT, RUSSELL/Western Maryland College  
 MEYD, CONSTANCE/University of Maryland at Baltimore  
 MILLER, JACK/University of Maryland, Baltimore County  
 MILLER, JAMES/University of Maryland, College Park  
 MILLER, JONOTHAN/University of Maryland, College Park  
 MILLER, PAUL/University of Maryland, College Park  
 MILLER, ROBERT/University of Maryland, College Park  
 NEWMAN, JOHN/Washington and Lee University  
 NICHOLSON, PHYLLIS/Valparaiso University  
 O'CONNELL, STEPHEN/University of Notre Dame  
 OKTAY, SERAP/University of Maryland, College Park  
 PANAGOS, ANDREW/University of Maryland, College Park  
 PARKER, STEVEN/Brown University  
 PENTON, CATHY/University of Maryland, Baltimore County  
 PERLMAN, DANIEL/St. Lawrence University  
 PEROUTKA, ROBERT/Duke University  
 PERRY, ROBERT/Lee College  
 PHILLIPS, ROBERT/Lafayette College  
 PRENDERGAST, MAUREEN/Loyola College  
 PRINCE, THOMAS/George Washington University  
 PUTHAWALA, ANWER/Mount St. Mary's College  
 RANDALL, NEIL/Western Maryland College  
 RAWLINGS, MARSDEN/Amherst College  
 REDINGTON, JOHN/University of California, Berkeley  
 REISINGER, III, ARTHUR/Western Maryland College  
 RESHEW, BENJAMIN/University of Maryland, College Park  
 RICHARDS, HENRY/Eisenhower College  
 RICHTER, DONALD/Johns Hopkins University  
 ROBINSON, RAMONA/University of Maryland, College Park  
 ROCK, KENNETH/University of Maryland, College Park  
 ROSELLE, DAVID/Bucknell University  
 ROSENBLUM, BRUCE/University of Maryland, College Park  
 ROWEN, SHERI/University of Maryland, College Park  
 SACHS, GARY/University of Pennsylvania  
 SACHS, REBECCA/University of Maryland, College Park  
 SALVAGNO, RALPH/University of Maryland, College Park  
 SAMARAS, THOMAS/University of Maryland, College Park  
 SCHREIBER, JONATHAN/Massachusetts Institute of Technology  
 SCHWARTZ, HOWARD/University of Maryland, College Park  
 SCHWARTZ, JERRY/LaSalle College  
 SHAPIRO, BARBARA/St. John's College  
 SHEAR, MICHAEL/Tufts University  
 SHMORHUN, EUGENE/Swarthmore College



SHUGOLL, WAYNE/Emory University  
 SHUTTA, JOHN/Georgetown University  
 SIEGEL, BRIAN/Duke University  
 SIEGEL, ELIOT/University of Maryland, College Park  
 SILVIA, JR., CHARLES/Johns Hopkins University  
 SISK, LEONARD/Virginia Polytechnic Institute and State University  
 SMIGOCKI, SUSAN/University of Maryland, Baltimore County  
 SMITH, KAREN/Johns Hopkins University  
 SNYDER, LAWRENCE/Loyola College  
 SOLTANI, SEPEHR/University of Maryland, College Park  
 SPENCER, WENDY/University of Michigan  
 SPURRIER, ELLEN/Loyola College  
 STEPHENSON, LAURA/Western Maryland College  
 STILLWELL, MARK/University of Oklahoma, Norman Campus  
 STOKES, JOHN/Hampden-Sydney College  
 STRAUSS, LEON/Johns Hopkins University  
 STROMBERG, MARK/University of Maryland, College Park  
 STROTHERS, III, HARRY/Indiana State University  
 STRULL, DAVID/Oberlin College  
 STUART, SUSAN/St. Lawrence University  
 SURELL, JONATHAN/University of Maryland, College Park  
 SWEREN, BENNETT/Brown University  
 TANO, STEVE/Catholic University of America  
 TAYLOR, DAVID/Western Maryland College  
 THOMPSON, ALFRED/University of Colorado, Boulder  
 TSENG, JENNIFER/Oberlin College  
 TSENG, PAUL/Purdue University  
 VARIPAPA, ROBERT/University of Maryland at Baltimore  
 VAZQUEZ, EMILIO/George Washington University  
 WAXMAN, DAVID/University of Maryland, College Park  
 WHEELER, ARTHUR/University of Maryland, Baltimore County  
 WILEY, JOSEPH/Loyola College  
 WILLIAMSON, BARBARA/Howard University  
 WITKIN, GARY/Wesleyan University  
 WOOLF, BARBARA/University of Southern Alabama  
 YIN, DAVID LUNG/University of Maryland, College Park  
 ZENKER, PAUL/University of Notre Dame

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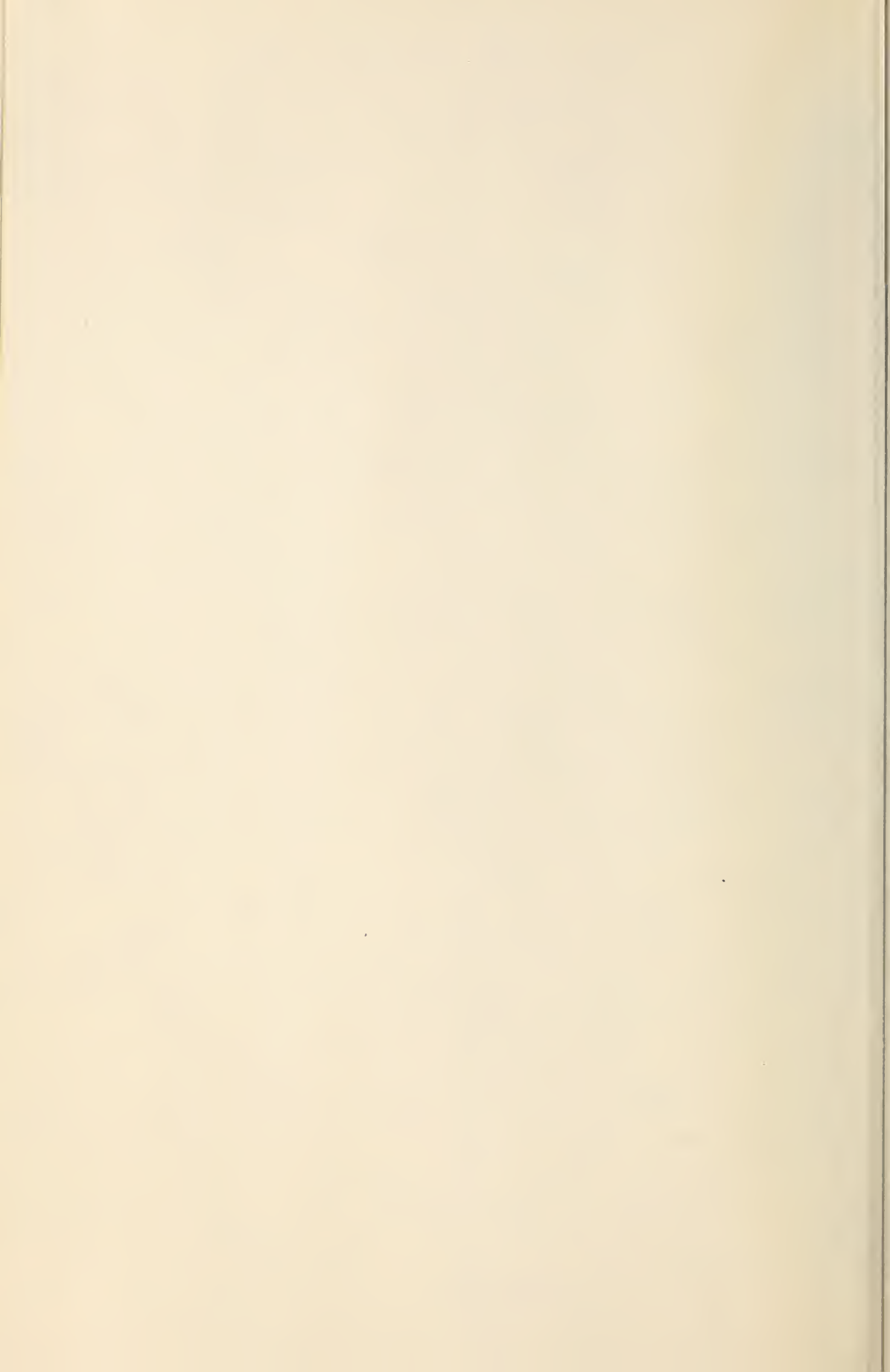
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MANUSCRIPT ROOM

